JUVENILE CRIMINAL RECIDIVISM

Relations with personality and post release environmental risk and protective factors

Coleta van Dam

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Relations with personality and post release environmental risk and protective factors

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Coleta van Dam
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Promotores:	Prof. dr. J.M.A.M. Janssens
	Prof. dr. E.E.J. De Bruyn

Manuscriptcommissie:	Prof. dr. R.C.M.E. Engels (voorzitter)
	Prof. dr. J.P.S. Fiselier
	Dr. H.R.A. de Mey

The study which is reported in this dissertation was conducted in collaboration with "De Hunnerberg", an institution for juvenile correctional treatment in Nijmegen, the Netherlands.

CONTENTS

Chapter 1

GENERAL INTRODUCTION

Juvenile delinquency has become a serious problem in Western society. In the past decades, several studies were conducted to explain the development and continuation of juvenile delinquency from a psychological perspective. These studies generally aim at finding out why some individuals develop into delinquents and others do not. Two research traditions can be distinguished, studies that search for explanations in individual characteristics or more specifically personality traits (e.g. Eysenck & Gudjonsson, 1989) and studies that focus on environmental factors that contribute to the development and continuation of delinquent behaviour (e.g. Farrington, 2003; Loeber et al., 2003).

Within the area of studies that address the relation between personality traits and crime, Eysenck's theory has been one of the most influential. According to Eysenck (1977, 1998) the three basic PEN dimensions of personality (Psychoticism, Extraversion and Neuroticism) are related to physiological mechanisms in the brain and central nervous system (CNS). Through the working of the CNS and the related conditioning processes (see Eysenck & Gudjonsson, 1989), it could be convincingly theorized that delinquents should score high on the PEN dimensions. However, full empirical evidence for Eysencks' hypothesis has not often been found (see Blackburn, 1993; Eysenck & Gudjonsson, 1989).

Studies that focus on environmental factors generally concentrate on risk and protective factors in childhood and adolescence that are related to, or predict offending in adolescence and adulthood (for reviews see e.g. Hawkins et al., 1998; Lipsey & Derzon, 1998). The Cambridge study of Farrington (2003) and the Pittsburgh Youth Study of Loeber (Loeber et al., 2003) are examples of long-term projects which revealed a comprehensive set of risk and protective factors for the development of delinquency, but also for persistence in and desistance from criminality. Environmental risk and protective factors that are related to the development and continuation of criminal behaviour are found in the areas of family, school/work, finances, peers and substance use.

In both traditions, the study of juvenile criminal recidivism has received relatively little attention. Moreover, studies that explicitly examined predictors of juvenile recidivism (for reviews see Cottle, Lee, & Heilbrun, 2000; Loza, 2003) seldom considered risk and protective factors in the post release situation. Also, combined effects of personality traits and environmental risk and protective factors on delinquency and recidivism have rarely been studied. The need for studies on effects of personality traits and post release risk and protective factors has been stressed by Heilbrun et al. (2000), Loza (2003), Piquero, Brame, Mazerolle, and Haapanen (2002) and Zamble and Quinsey (1997). The general aim of the present dissertation is to contribute to this relatively new area of interest and to get more insight in the contribution of personality traits and post release risk and protective factors in juvenile criminal recidivism after release from a correctional treatment centre.

Five research questions were formulated.

1. How many juveniles recidivated after their release from a juvenile correctional treatment centre?
2. To what extent are personality traits related to juvenile criminal recidivism?
3. To what extent are environmental risk and protective factors in the post release situation related to juvenile criminal recidivism?
4. Can juvenile criminal recidivism in the post release situation be explained by combined effects of personality traits and environmental factors?
5. What is the relative contribution of personality traits and environmental factors in the post release situation to juvenile criminal recidivism?

The research was carried out in a juvenile correctional treatment institution "De Hunnerberg", situated in Nijmegen, the Netherlands. "De Hunnerberg" is one of fifteen juvenile detention centres in the Netherlands. At the time of data-gathering (October 1999 - December 2002) "De Hunnerberg" consisted of two centres, a treatment centre and a detention centre[1]. Boys were sent to the

[1] The latest years several reorganizations took place within the Department of Justice in the Netherlands, especially concerning the area of juvenile detention centres. Also "De Hunnerberg" has been reorganized. During the year 2003, the treatment centre has been removed and "De Hunnerberg" continues to be only a detention centre.

detention centre to serve out short sentences. Juveniles were sent to the treatment centre if they committed their crime due to a developmental disorder. They stay there for approximately two years. The treatment program in "De Hunnerberg" is based on principles of environmental therapy and learning theory. Environmental therapy provides a general framework from which rules are generated for all boys. These rules mainly concern aspects of daily structure, like waking-up times, behaviour rules during mealtimes. Guidelines for these rules are found in the general societal norms and values. Individual treatment is guided by learning theory. An important aspect of the individual therapy is an analysis of the committed offence. In this analysis, it is examined which factors triggered the boy to commit a specific offence. Following goals are formulated to change the boys' behaviour in comparable situations. New behaviour is learned by rewarding desired behaviour and by ignoring undesired behaviour.

Outline of this dissertation

Four studies were conducted in order to answer the research questions. The present dissertation is a compilation of these four studies, all of which have been submitted (or accepted) for journal publication. Each study focuses on relations between personality and/or environmental factors and juvenile criminal recidivism. Together they aim at providing insight in the question why some juveniles become a recidivist after release from a detention centre and others do not.

Chapter 2 *Personality, Delinquency and Criminal Recidivism*

In this study, the relationship between PEN profiles, delinquency and recidivism in juvenile offenders is explored. According to Eysenck (1977, 1998), personality is based on three basic dimensions: Psychoticism, Extraversion and Neuroticism (PEN-model). Eysenck hypothesized that delinquents are characterized by a homogenous high PEN-profile (high on P, high on E, high on N). Since full empirical support for Eysenck's high PEN-profile has not been found, Eysenck and Gudjonsson (1989) suggested the existence of two personality types within prison populations: the active type (high PEN) and the inadequate type (high P, low E, high N). In the study described in this chapter, it was examined whether these two theoretically expected offender types were present in juvenile offenders placed in "De Hunnerberg" and whether these types were related to recidivism after release.

We used data from a sample of 126 male juveniles who were incarcerated in "De Hunnerberg". Personality was measured by elements of a standard testing program that runs in "De Hunnerberg" twice a year. This testing program included two personality questionnaires that cover a broad range of personality traits, but were not framed within Eysencks' PEN model. Therefore we used items of the available personality questionnaires to construct experimental PEN scales. At the moment of data gathering, 95 boys of the total sample of 126 had left "De Hunnerberg". For those ex-prisoners, official criminal records were used to obtain recidivism rates. Juveniles who had been arrested at some point in time after their release from "De Hunnerberg" were classified as recidivist.

Cluster analysis was carried out to assess whether the theoretically expected PEN profiles were present in the incarcerated sample. Next, to examine which type would be more typical for recidivists than for non-recidivist delinquents, chi-square analysis and survival analysis were conducted.

Chapter 3 *Post Release Environmental Risk and Protective Factors of Juvenile Criminal Recidivism*

In this study relations between risk and protective factors in the post release situation and criminal recidivism were examined. We used data of a sample of 57 adolescent males who were released from "De Hunnerberg". To measure risk and protective factors in the post release situation, boys were asked to complete the Follow-up Interview for Living circumstances (FIL; van Dam, Janssens, & De Bruyn, 2000), approximately one year after their release from the institution. This interview was specially constructed for the purpose of this study. Risk and protective factors were ordered in domains of child characteristics, family factors, school/work, peers, economic deprivation and social network. Recidivism was measured by a self-report questionnaire. Two parameters of recidivism were distinguished: occurrence (whether a person has committed an offence after release or not) and severity (how severe is the offence committed).

First, we assessed relations between single risk and protective factors and occurrence of recidivism. Next relations between accumulation of risk and protective factors and occurrence of recidivism were examined. Following relations between single risk and protective factors and severity of recidivism were studied.

And finally, relations between accumulation of risk and protective factors and severity of recidivism were tested.

Chapter 4 *PEN, Big Five, Juvenile Delinquency and Criminal Recidivism*

In this study relationships among personality, delinquency and criminal recidivism were studied from the perspective of two influential personality theories: Eysenck's PEN model and the Big Five model. Eysenck's PEN model (Eysenck, 1977) is one of the few theories that explicitly related personality traits to criminality (see Eysenck & Gudjonsson, 1989). The Big Five model is to some extent related to the PEN model, but despite its popularity, the Big Five model has scarcely been used to study relations between personality and delinquency or recidivism. In this study we analysed which of both models (PEN or Big Five) is better able to differentiate between an offender sample and a normal sample of college students, and between recidivists and non-recidivists.

The offender sample consisted of 96 convicted offenders; 61 of them were released from "De Hunnerberg" and 35 were still incarcerated at the time of data gathering. The college students sample consisted of 204 male adolescents attending vocational training college in the region of Nijmegen, the Netherlands.

Eysencks' PEN model was measured by the Eysenck Personality Questionnaire Revised (EPQ-R; Eysenck, Eysenck, & Barrett, 1985). The EPQ-R contains four scales: Psychoticism, Extraversion, Neuroticism and a Lie-scale. The Lie scale was not included in the analyses. The Big Five model was measured by the Short Big Five Questionnaire (SBF; Gerris et al., 1998). The SBF contains of five scales that represent five dimensions of personality: Extraversion, Neuroticism, Agreeableness, Conscientiousness and Resourcefulness. Recidivism was measured by a self-report questionnaire and official criminal records. Furthermore two parameters of recidivism were used: occurrence (whether a person has committed an offence after release or not) and severity (how severe is the offence committed).

First, to examine whether the Big Five and the PEN-model could distinguish convicted offenders from college students, multivariate and univariate analyses of variance were conducted. Next, multivariate and univariate analyses of variance were carried out to test which model, PEN or Big Five, differentiates best between recidivists and non-recidivists. Finally we examined whether both models could predict severity of recidivism by means of multiple regression analyses.

Chapter 5 *Relations between Post Release Environmental Risk and Protective Factors, Personality and Recidivism*

While development and continuation of juvenile delinquency has been extensively studied from a psychological perspective, the study of juvenile criminal recidivism has received relatively little attention. And although it has been acknowledged that both personality and environmental risk and protective factors are important in explaining criminality, empirical studies on these combined effects are scarce. In this study we examined the combined influence and relative weight of personality and post release environmental risk and protective factors on juvenile criminal recidivism.

We used data from 60 male adolescents who were released from "De Hunnerberg". To measure risk and protective factors in the post release situation, respondents were asked to complete the Follow-up Interview for Living Circumstances (FIL; van Dam, Janssens, & De Bruyn, 2000), approximately one year after their release from the institution. Personality was measured by Eysencks' Personality Questionnaire Revised (EPQ-R; Eysenck, Eysenck, & Barrett, 1985). Recidivism was measured by a self-report questionnaire and official criminal records. Furthermore two parameters of recidivism were used: occurrence (whether a person has committed an offence after release or not) and severity (how severe is the offence committed).

By means of cluster analyses it was first examined whether a typology based on personality factors could explain variances in recidivism and whether a typology based on environmental risk and protective factors could explain variances in recidivism. Next it was tested whether a combination of personality and environmental factors could give a more detailed insight in the explanation of recidivism. Finally, hierarchical regression analyses were conducted to analyse the relative weight of personality and environmental factors to the prediction of occurrence and severity of recidivism.

Chapter 6 *Conclusions and General Discussion*

In this chapter results and conclusions of the foregoing chapters are summarized and discussed. Furthermore, distinctive features and limitations of the studies presented in this dissertation are discussed. Finally, we describe some practical implications of the studies presented in this dissertation.

Chapter 2

PERSONALITY, DELINQUENCY AND JUVENILE CRIMINAL RECIDIVISM

Coleta van Dam, Eric E.J. De Bruyn and Jan M.A.M. Janssens

The present study explores the relationship between PEN profiles, delinquency and recidivism in young offenders. According to Eysenck, personality is based on three basic dimensions: Psychoticism, Extraversion and Neuroticism (PEN-model). Eysenck states that delinquents score high on all three dimensions. A group of young male offenders who were placed in a juvenile detention centre in the Netherlands has been studied to test Eysenck' s hypothesis. His hypothesis was partially confirmed. From a cluster analysis it appeared that only a small group of offenders scored high on all three PEN-dimensions. Finally, it is concluded that the PEN-profiles were not able to differentiate between recidivists and non-recidivists.

INTRODUCTION

Can delinquents be differentiated from non-delinquents on the basis of their personality profiles? Within the area of personality psychology, trait-theorists especially link personality characteristics with behaviour. Trait-theory states that personality can be described by basic independent dimensions of personality each consisting of a number of correlated traits. These traits are linked directly to behaviour (Costa & McCrae, 1998). In recent years much attention has been paid to the relation between traits and delinquency. Eysenck (1977) is one of the few trait-psychologists who explicitly constructed a theory on the link between personality and criminality (see also Eysenck & Gudjonsson, 1989). In most studies his theory is used to confirm his hypothesis, and to confirm that delinquents do differ from non-delinquents on the three personality dimensions Eysenck distinguished. In very few studies has his theory been used to explain recidivism. Recidivism can be considered as a more serious form of delinquency, because of the persistence of criminal behaviour. In this study we examined whether different personality profiles based on Eysenck's theory could be distinguished in an incarcerated juvenile delinquent sample and which profile is more typical for recidivists than for non-recidivists.

According to Eysenck (1977) there are three fundamental factors of personality: Psychoticism (P) Extraversion (E) and Neuroticism (N) (the PEN-model). These factors or dimensions are independent and biologically based. According to Eysenck, they are linked to criminality through the working of the central nervous system (CNS). Delinquents score high on all three dimensions. Due to the working of their CNS, they are less sensitive for punishment, which results in poor conditioning followed by a poor conscience development.

Extraverts can be described by the following traits: sociable, active, lively, sensation-seeking, carefree, dominant, surgent, assertive and venturesome. The biological basis of E is the level of cortical arousal. Extraverts are characterised by a low level of cortical arousal relative to introverts. To gain an optimal level of arousal, they need more excitement and stimuli in their environment. Because of their low arousability, extraverts are less susceptible for pain and punishment, and experience less fear and anxiety. Therefore they form conditioned responses slowly and will be less socialised than introverts (Blackburn, 1993; Eysenck, 1977; Eysenck & Gudjonsson, 1989).

Neurotics are described by the traits: anxious, depressed, moody, shy, tense, irrational, guilt feeling, low self-esteem and emotional. The biological foundation of N is laid in the sympathic part of the autonomic nervous system. This part of the nervous system is involved in the fight and flight reactions. In situations in which strong emotions such as anger or anxiety are experienced, this system prepares the organism for an effective reaction. Neurotics have a nervous system of which the sympathic part is particularly strongly reactive to external stimuli. Neurotics therefore have a stronger emotional reaction to various forms of stress than non-neurotics have. According to Eysenck, the high N-score combined with the high E-score of delinquents especially reinforces anti-social behaviour (Eysenck, 1977; Eysenck & Gudjonsson, 1989; Gudjonsson, 1997).

High P-persons are impulsive, egocentric, cold, aggressive, unempathic and tough-minded. When put under great stress the probability of developing a functional psychosis increases (S. Eysenck, 1997). In his recent work, Eysenck (1998) suggests that the P dimension is also based on the cortical arousal level in the central nervous system, and subsequently linked to conditionability and conscience development. Impulsivity would be the crucial trait in the link between conditionability and personality. Impulsivity belongs to P and conditionability is linked to cortical arousal. Therefore high P-scorers, just like high E-scorers, have a low level of cortical arousal, and are less easy to condition and more prone to developing antisocial behaviour (Eysenck, 1998; Gudjonsson, 1997).

Summarising, it can be stated that based on biological and conditioning processes, Eysenck hypothesised that delinquents score high on all three basic dimensions of personality. Delinquents could be characterised by a homogenous high PEN-profile. Studies, however, indicate that delinquents do score high on P, but not always on E and N (see Blackburn, 1993; Eysenck, 1998). In their critical review of the domain, Eysenck and Gudjonsson (1989) discuss this finding and point to the heterogeneity of prison populations as a confounding factor. Cluster analyses of personality profiles in prison populations suggest two types of criminals; the active type (high on P, high on E, high on N), and the (socially) inadequate type (high on P, low on E, high on N). It is the active type, which corresponds to the theoretically expected PEN profile (high on P, E, and N) in criminal populations. Eysenck and Gudjonsson (1989) conclude that: “This is certainly a differentiation that should be borne in mind in all future studies” (p. 85).

Eysenck and Gudjonsson's review of the state of the art testifies that the theory has already triggered many studies on the relationship between delinquency and personality in both adolescent and adult criminal populations. However, less attention has been paid to the relationship between personality and recidivism. Assuming that re-offending delinquents (recidivists) are more prone to criminal behaviour than non-recidivists, it is expected that especially re-offending delinquents can be characterised by a homogeneous high PEN-profile. Two recent studies considered this relationship.

Raine, Venables, and Williams (1995) reported on a prospective study that included autonomic and central nervous system measures of arousal, orienting and classical conditioning. Three groups were used: criminals (antisocial adolescents who still committed criminal acts until the age of 29), desistors (antisocial adolescents who desisted from crime until the age of 29) and controls (non-criminals). The criminal group clearly represent long-term recidivists. Among other measures, criminals had significantly lower heart rate levels, lower skin conditioning (CS) arousal, and a worse CS conditioning than desistors, while controls had a mid position. Because Eysenk's theory links low arousal and low conditionability to high E and low arousal also to P, these results suggest that recidivists may score higher on P and E than non-recidivists and normals.

Steiner, Cauffman, and Duxbury (1999) used the Weinberger Adjustment Inventory, which measures two broad traits of personality, distress and restraint. A high distress score is characterised by anxiety, depression, low well-being and low self-esteem. High restraint can be described by impulse control, suppression of aggression, responsibility and consideration. Depending on the level of distress (high – low) and restraint (high – low), four personality types could be formed. Using survival analysis, re-arrest rates of male juvenile delinquents characterised by one of the four types were compared. Highest re-arrest rates were found in the group with low levels of distress and low levels of restraint. Lowest re-arrest rates were found in the group with high levels of distress and high levels of restraint. High distress seems to reflect high N, since both are described by anxiety, depression and low self-esteem. Furthermore high restraint seems to reflect low P: high restraint is described by consideration, impulse and aggression control: characteristics that are the opposite of high P. When interpreted in terms of

Eysenck's PEN-model, the results of the study by Steiner et al. would indicate that recidivists are characterised by high P (low restraint) and low N (low distress).

The studies of Raine et al. (1995) and Steiner et al. (1999) only partly support the hypothesis that recidivists would show a higher rate of the theoretically expected PEN profile than non-recidivists. More specifically, Steiner et al.'s findings suggest that recidivists seem not to score high on N at all. However, the findings are far from conclusive. Neither of the studies collected PEN profiles based on scales constructed to measure the dimensions P, E and N.

The present study explores the relationship between PEN profiles, delinquency and recidivism in young offenders. The first question we want to answer was whether young incarcerated male delinquents could be classified into an active and socially inadequate type. The expectation of finding the active type (high on P, E, and N) is based on Eysenck's theory. The expectation of finding the inadequate type (high P, low E, high N) is based on Eysenck and Gudjonsson's analysis of the mixed character of the delinquent population. The second question we want to answer is whether the theoretically expected PEN profile (active type) would be more typical for recidivists than for non-recidivist delinquents. This question reflects the hypothesis that a high PEN personality increases the probability of committing crime after detention.

The data we used to answer these questions were borrowed from a juvenile detention centre that runs a standard testing program twice a year. The testing program included two personality questionnaires. Although these questionnaires together cover the broad personality domain, they were not framed within the PEN model. Because it was not allowed to include another questionnaire in the testing program, we decided to use the items of the available personality questionnaires to construct experimental PEN scales. However, in order to evaluate the construct validity of these scales, we also decided to administer both the experimental scales and the scales of the Eysenck Personality Questionnaire Revised (EPQ-R; Eysenck, Eysenck, & Barrett, 1985) to additional samples of college students and offenders. We describe these two consecutive steps in the Method section.

METHOD

Setting

This study was carried out in "De Hunnerberg", a juvenile detention centre for correctional treatment located in Nijmegen, the Netherlands. It is one of thirteen detention centres in the Netherlands. Adolescents placed at these centres have committed serious offences. Our sample did not differ from the national population of young delinquents with respect to age, criminal record and ethnical composition (see Bernasco, 2001). Characteristic features for "De Hunnerberg" are that it has a male population and that it does not accept mentally retarded youngsters.

Participants

The target sample we studied consisted of 163 adolescent male delinquents who were placed in "De Hunnerberg" during the period between April 1995 and December 1998. From this group 133 boys (82%) participated in the research project, 15 (9%) refused to participate and 15 could not participate because of various reasons (mental illness, not enough knowledge of the Dutch language). Seven respondents were excluded because data were incomplete, resulting in a final sample of 126. The mean age of this sample was 16,6 years (sd = 1,4). Approximately half of the sample (52%) had Western-European origins, 18% Northern-African origins, 9% Surinamese origins, 8% came originally from the Netherlands Antilles, 5% from Turkey and 9% had diverse other origins (e.g. African, South-American).

At the moment of data gathering (December 2000) 95 boys of the total sample had left "De Hunnerberg", 16 boys still stayed there and 15 boys were transmitted to another institution. The 95 boys who left "De Hunnerberg" did not differ from the total sample (N=126) with respect to age and ethnical composition. For these 95 juvenile ex-prisoners, criminal records from the Criminal Justice Department of the Ministry of Justice were requested to obtain a measure for recidivism. Boys who had been arrested at some point in time after they left "De Hunnerberg" were classified as recidivist. The follow-up period varied with a minimum of 2 months and a maximum of 55 months. Sixty-one (61) of these boys eventually became a recidivist, and 34 did not.

Measures

The institution introduced a testing program in which a standard set of questionnaires were administered to all residents within 6 weeks after admission and following every 6 months. In this set two Dutch personality questionnaires were included: the Dutch Personality Questionnaire (DPQ; Luteijn, Starren, & van Dijk, 1985) and the Dutch Shortened MMPI (DSM; Luteijn & Kok, 1985). Both questionnaires consist of items to be answered on a three-point scale. In order to measure the PEN dimensions, we used the available data to construct PEN scales. The psychometric analyses were based on the item scores of the 110 boys who had completed the set of questionnaires within 6 weeks after admission to "De Hunnerberg". The other 16 boys completed the set of questionnaires within 6 months after admission and therefore were not included in the psychometric analyses.

Construction of the PEN-Scales

Each of the three authors independently assigned all 216 items of the DPQ and DSM to one, and only one of the three PEN- dimensions and we started the construction of the scales using the items on which we fully agreed. For P we had complete agreement on 31 items, for E on 47, and for N on 35 items. For each dimension we selected the 15 items with the highest item-total correlations which resulted in a set of 45 items with item-total correlations ranging from .35 to .66. Cronbach's alpha's for P, E and N proved to be respectively .82; .86; and .88.

To find out whether the scales clearly revealed our target dimensions, a principal-axis factor analysis was conducted on all 45 items. We found three factors, a P-, E-, and N-factor. Nearly all items loaded highly on the factor they were assumed to load on. Table 2.1 presents these item loadings, and also the loadings of items on factors (> .30) they were not supposed to load on.

Two items (items 14 and 15) which were assigned to P by the authors, appeared to load primarily on N. P-item 4 loaded on the P-, and N-factor. Four E-items loaded not only on the E-factor, but also negatively on the N-factor. Two N-items loaded on the N- and E-factor and one N-item loaded on all three factors.

Table 2.1
Factor Loadings of the Selected PEN-items on Three Factors (N=110).

Items Psychoticism				Items Extraversion				Items Neuroticism			
	Factors				Factors				Factors		
	P	E	N		P	E	N		P	E	N
1	.42			16		.59		31	.31	-.46	.37
2	.36			17		.42		32		-.31	.67
3	.59			18		.78		33			.42
4	.40		.31	19		.50		34			.56
5	.31			20		.68		35			.44
6	.54			21		.59	-.31	36			.58
7	.60			22		.63		37		-.38	.48
8	.49			23		.35		38			.54
9	.63			24		.34	-.40	39			.51
10	.43			25		.46		40			.37
11	.34			26		.49	-.33	41			.44
12	.39			27		.34	-.47	42			.57
13	.39			28		.46		43			.57
14	.27		.43	29		.43		44			.52
15	.25		.53	30		.49		45			.54

Because of these unexpected loadings we examined whether scale scores could be used in further analyses instead of factor scores. Table 2.2 presents the correlations between scale and factor scores.

Table 2.2
Correlations Between Scale Scores and Factor Scores.

	Factor P	Factor E	Factor N
Scale P	.90**	.16	.36**
Scale E	-.12	.93**	-.34**
Scale N	.30**	-.29**	.91**

**p < .01

As shown in Table 2.2 the PEN-scale scores correlate highly with the PEN-factor scores. Therefore it can be concluded that the scale scores sufficiently represent the PEN-factors.

Comparison between EPQ-R and Constructed PEN-Scales (Validity)

In order to find out whether our Constructed PEN-Scales (CPS) are sufficiently related to the PEN-scales of Eysenck, comparative analyses with the Eysenck Personality Questionnaire Revised (EPQ-R; Eysenck, Eysenck, & Barrett, 1985) were carried out in two samples: a sample of college students and a second offender sample.

The college student sample consisted of 206 male adolescents attending vocational training college in the region of Nijmegen, the Netherlands. Age varied between 15 and 24 years (mean= 17.23 sd=1.32). Vocational training colleges were selected because of the similarity with the convicted offender group with regard to age and educational level. The EPQ-R and the CPS were administered to the students during classroom hours. In further analyses mean scores of the college student sample on the P, E and N dimensions of the CPS were used as norm scores.

The offender sample consisted of 56 male adolescents who had been convicted for a serious criminal offence. To serve out their sentence, they were placed in "De Hunnerberg". Age varied between 15 and 25 years (mean = 19.15 sd=2.26). Assessment of the EPQ-R and the CPS took place one year after the respondents' release from the detention centre, as part of a larger study on relations between personality, environmental factors and recidivism after release.

In Table 2.3 mean scores, standard deviations and reliabilities of the EPQ-R and the CPS scales are described. Furthermore, correlations between the corresponding P, E and N scales are presented for both comparison groups.

Table 2.3
Means, Standard Deviations, Reliabilities and Correlations of the P, E, and N Scales of the EPQ-R and the CPS.

	College students (N=206)				Offenders (N=56)			
	M	SD	α	R	M	SD	α	R
EPQ-P	10.65	3.88	.62	.44**	10.13	4.34	.74	.61**
CPS-P	9.98	5.67	.72		10.07	6.32	.79	
EPQ-E	16.24	3.57	.71	.56**	15.80	3.60	.72	.64**
CPS-E	20.73	6.60	.80		22.61	7.09	.86	
EPQ-N	8.88	4.44	.78	.66**	9.13	5.27	.85	.87**
CPS-N	5.95	5.96	.82		5.71	6.58	.87	

**p < .01

In both samples, alpha's of the scales of the CPS appeared to be ≥.72. Except the alpha of the P-scale of the EPQ-R in the college student sample, alpha's of the EPQ-R scales were ≥.71. In the offender sample, correlations between the corresponding scales of the EPQ-R and the CPS were significant and ≥.61. In the college student sample, correlations between the corresponding scales were significant, but lower than in the offender sample.

RESULTS

Personality Profiles in the Institutionalised Delinquent Sample

We used hierarchical cluster analysis (Ward's method; SPSS, 1999) to distinguish personality profiles in the institutionalised delinquent sample. A three-cluster solution revealed three distinguishable and interpretable personality profiles. A four-cluster solution did not add an extra interpretable personality profile. Table 2.4 presents the mean scores and standard deviations on the P, E and N dimensions per cluster. ANOVA was used to test for significant differences on the dimensions between the clusters. In order to describe the profiles in terms of high, low or average, mean scores on the dimensions in each cluster were compared with the scores of the norm group (college students sample).

As shown in Table 2.4, most respondents belonged to cluster 1. Compared with the norm scores, the profile of cluster 1 can be described as relatively low on P ($t = -3.44$, $p < .01$), high on E ($t = 8.02$, $p < .01$) and low on N ($t = -4.47$, $p < .01$). The profile of delinquents who belonged to the second cluster was characterised by relatively high P scores ($t = 8.00$, $p < .01$), low E scores ($t = -8.23$, $p < .01$) and high N scores ($t = 6.12$, $p < .01$). This profile reflects the inadequate delinquent type as described by Eysenck. A small group of respondents belonged to cluster 3. These delinquents were characterised by a homogeneous high PEN-profile. Compared with the normscores they have relatively high P scores ($t = 9.61$, $p<.01$), high E scores ($t = 5.67$, $p < .01$) and high N scores ($t = 8.43$, $p < .01$). This profile corresponds with the active delinquent type as described by Eysenck.

Table 2.4

Personality Profiles of the Institutionalised Delinquent Sample (N=126).

	Cluster 1 n=80		Cluster 2 n=36		Cluster 3 n=10		Total N=126		Norm score
	M	SD	M	SD	M	SD	M	F	
Psychoticism	8.03[a]	5.08	17.00[b]	5.26	19.40[b]	3.10	11.49	53.21**	9.98
Extraversion	24.71[a]	4.44	12.50[b]	6.00	25.90[a]	2.89	21.32	83.47**	20.73
Neuroticism	4.08[a]	3.76	13.33[b]	7.24	20.80[c]	5.57	8.05	74.31**	5.95
Description of profiles	P-E+N-		P+E-N+		P+E+N+				

Note: Different superscripts for mean scores of the same variables indicate significant differences.

- = below average, + = above average

** $p < .01$

Personality Profiles of Recidivists and Non-Recidivists

The personality profiles as presented in Table 2.4 were based on measurement of the personality dimensions during the detention period. To examine whether these personality profiles could predict later recidivism, chi-square analysis was used. The distribution of recidivists and non-recidivists within the three profiles was tested. The results are presented in Table 2.5.

Table 2.5
Distribution of Personality Profiles of Recidivists versus Non-Recidivists.

		Recidivists		Non-recidivists		
		n	%	n	%	n
Cluster 1	low P high E low N	34	56%	23	68%	57
Cluster 2	high P low E high N	22	36%	8	24%	30
Cluster 3	high P high E high N	5	8%	3	9%	8
N		61	100%	34	100%	95

Table 2.5 reveals that most recidivists as well as most non-recidivists were characterised by the profile of cluster 1 (low P, high E, low N). From the recidivists, 8% was characterised by a homogeneous high PEN-profile (cluster 3), and from the non-recidivists, 9% was characterised by that high PEN-profile. Differences between the profile distributions of the recidivist and non-recidivist group were not significant ($\chi^2 = 1.61$, $p = .45$).

The chi-square analysis did not control for differences in observation periods. The probability of non committing an offence is higher for those who were released later than for those who were released at an earlier stage. We applied a survival-analysis (SPSS; 1999) in order to control for these differences. Personality profile was the independent, and months without arrest the dependent variable. In Figure 2.1 the survival functions of the three profiles are presented.

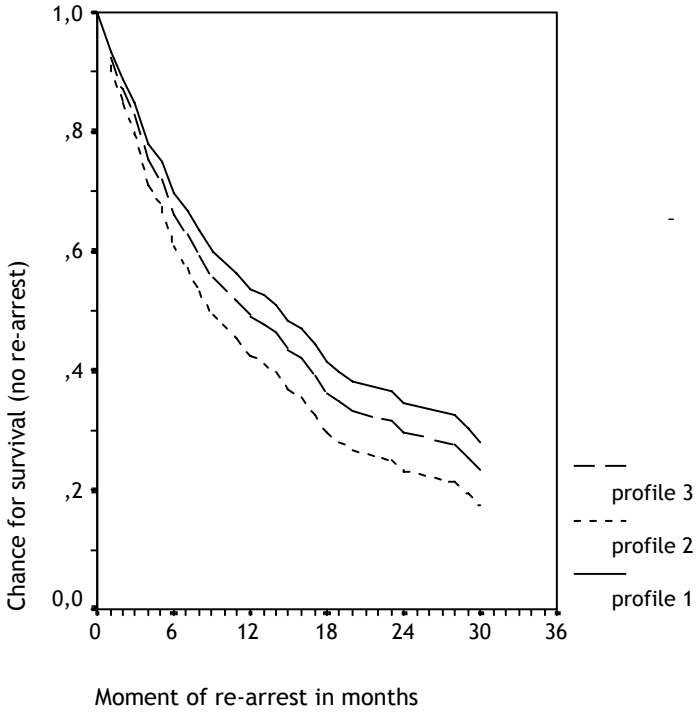

Figure 2.1
Survival Function of Recidivism for the Profiles 1, 2 and 3.

Although differences were not significant (Wald = 1.365, p = .51) it was remarkable that ex-prisoners with profile 2 (high P, low E, high N) appeared to have the lowest chance to survive (i.c. highest risk for re-arrest) instead of ex-prisoners with profile 3 (high P, E,N). We expected the high PEN-profile to be most typical for recidivists. In conclusion, it can be stated that we did not find an association between personality profiles and recidivism.

DISCUSSION

Eysenck and Gudjonssons' (1989) analysis of the heterogeneity of the delinquent population led us to expect to find the active (high P, E and N) and

inadequate (high P, low E and high N) type represented in our sample. Furthermore, we hypothesized that the active type, which is predicted by Eysenckian theory, would be most represented among the recidivists of our sample. Our findings confirm the first hypothesis, but do not support the second one.

The fact that we found the active and inadequate type in our delinquent sample does not mean that these types are representative for young male delinquents. Quite the contrary, the inadequate type applies to 29% of our sample and the active type only to 8%. In 63%, the young male delinquents exhibit a profile of low P, high E and low N. This type may be called the extravert type because of the high level of E and low levels of P and N. Eysenck and Gudjonsson (1989) reviewed studies that had applied cluster analyses on young delinquent samples. When we compare our results with those reported in their review, some conclusions can be made. First of all, our data fit partially with the Eysenckian theory about P, in that two of the three profiles have a high P component. Secondly, our finding of a low N component in one of our profiles is not unique. A low N component has also been found in some other studies and Eysenck has stated that N is more characteristic for older criminals (see also Blackburn, 1993). However, rather surprising is the combination of low N, low P with high E. Though it has been stated that high P is always involved in criminality, the finding of delinquents with low Psychoticism is not exclusive. McEwan and Knowles (1984) carried out cluster analysis on EPQ-scores in a young adult male incarcerated sample. According to McEwan and Knowles two of the four clusters were not in direct accord with Eysenck's theory: one cluster with low P and one cluster with high E and low N. They had no clear explanation for these findings. In their study on five groups of criminals, Eysenck, Rust, and Eysenck (1977) also found one type with low Psychoticism. Respondents who were specialized in crimes concerning fraud (conmen) appeared to score low on Psychoticism, compared to respondents who committed violent or property crimes. However, none of the respondents in our study were convicted for crimes concerning fraud. We do not have a clear explanation for the finding that most respondents in our delinquent sample can be characterized by low P, high E and low N. Our findings indicate that it is the emotional stable male adolescent with strong extravert tendencies who is most at risk of becoming delinquent.

We unexpectedly did not find a higher recidivism rate among the active delinquents. Steiner et al. (1999) found the highest rates among delinquent adolescents of what they called, the nonreactive type (low levels of distress and low levels of restraint). As we pointed in the introduction of this article, high distress as measured by Steiner et al. seems to reflect high N while high restraint seems to reflect low P. This would mean that recidivists are characterised by high P and low N, a finding also contrary to our expectation. However, it is difficult to compare the outcome of the Steiner et al. study with that of the present study. Steiner et al. did not use scales specifically constructed to measure P, E and N and therefore the resulting profiles do not directly match with one of our PEN profiles. Secondly, we had only 95 adolescents of which re-arrest data could be collected and only 10 were of the active type. Steiner et al. could follow 195 juveniles, 18 of which exhibited the non-reactive type (high P, low N.). We are not familiar with any other study that applied survival analysis on juvenile delinquent samples using PEN-personality dimensions as predictor variables.

This study is the first of this kind in the Netherlands. However, it has only been conducted in one of the thirteen institutions for correctional treatment in the Netherlands, "De Hunnerberg". Further data-collecting using Eysenckian scales is needed in order to have safer ground for generalisation. In the present study we analysed an existing dataset and were obliged to construct scales that supposedly measure the PEN dimensions. There are indications that we succeeded in this vein, since the alpha's of the CPS-scales are high and the EPQ-R and the CPS-scales appeared to be sufficiently related. Although it must be noted that the correlation of both P-scales in the college student sample was relatively low compared to the offender sample.

Chapter 3

POST RELEASE ENVIRONMENTAL RISK AND PROTECTIVE FACTORS OF JUVENILE CRIMINAL RECIDIVISM

Coleta van Dam, Jan M.A.M. Janssens and Eric E.J. De Bruyn

In this study relations between post release environmental risk and protective factors and juvenile criminal recidivism are explored. One year after their release from a juvenile detention centre a sample of 57 adolescent male offenders was interviewed on their living circumstances. Occurrence and severity of recidivism were assessed by a self-report questionnaire. Risk and protective factors were ordered in domains of child characteristics, family factors, school/work, peers, economic deprivation and social network. Risk factors in the domains of child characteristics, family factors and economic deprivation were related to occurrence and severity of recidivism, while risk factors in the peers domain were only related to severity. Protective factors in the domains of child characteristics, peers and social network were associated with severity of recidivism. Accumulation of risk and protective factors was related to both occurrence and severity of recidivism. Practical implications of these results are described.

INTRODUCTION

Research on risk and protective factors that are related to criminal recidivism or re-offending has traditionally concentrated on the so-called static factors. Static factors refer to events in the past or characteristics of the offender that are related to recidivism, but are not subject to change; for example, age, offence history, early family factors, previous school achievement (Carr, 2001; Cottle, Lee, & Heilbrun, 2001). Recently a shift in focus of attention has been made. It is recognized that it is important to gain insight in the actual circumstances, or environmental factors in the period after release that might lead to recidivism (Piquero, Brame, Mazerolle, & Haapanen, 2002; Zamble & Quinsey, 1997). The aim of this study is to contribute to this relatively new area of interest. More specifically, we studied which post release environmental risk and protective factors were related to juvenile criminal recidivism.

Risk factors are defined as factors that contribute to a negative outcome. Protective factors can be defined as factors that increase the likelihood of a positive outcome or protect against risk. In the present study we explored whether risk and protective factors found to be related to delinquency and recidivism in general, also applied to a post release situation. The risk and protective factors found in the literature are usually categorized in four domains: child characteristics, family factors, school/work factors and peers factors (see for example Stouthamer-Loeber, Loeber, Wei, Farrington, & Wikström, 2002). In addition to these four domains, we distinguished a fifth domain consisting of risk factors concerning economic deprivation, and a sixth domain consisting of protective factors concerning social network. In the following section, risk and protective factors of these domains are described with regard to their relation to recidivism.

REVIEW OF THE LITERATURE

Child Characteristics

Criminal attitude. Attitude toward delinquent behaviour is a strong predictor for actual delinquent behaviour and violent offending (Hawkins et al., 1998; Jessor, Van Den Bos, Vanderryn, Costa, & Turbin, 1995). Vitaro, Brendgen, and Tremblay (2000) found a significant positive correlation between favourable attitude toward delinquency and actual criminal behaviour. Furthermore, their results revealed that

having a negative attitude toward delinquency protected against the influence of a friends' deviancy. Attitudes toward delinquency may also play part in recidivism after release. Favourable attitudes toward delinquent behaviour may enhance the chance of re-offending.

Moving to another neighbourhood. It is stated that one of the reasons why residential treatment or intervention programs for delinquents are not effective, is because delinquents move back to their old living environment after treatment (Junger-Tas, 1996). In a follow-up study of 451 adolescents who completed their sentence in a juvenile detention centre it appeared that moving to another area after release was associated with less reconvictions than returning to the same address (Buikhuisen & Hoekstra, 1974; Osborn, 1980). It is not quite clear why movement to another neighbourhood in itself is related to desistance. It may reflect a motivation to start a new life in a new environment and therefore it may enhance desistance. In the current study, moving to another neighbourhood is only considered to function as a protective factor if the reason for moving is the intention to start a new, more conventional way of living.

Alcohol and drug use. Studies which reported on substance use and offending of adolescents or young adults revealed that substance abuse and heavy drinking is significantly associated with offending, persistence and recidivism (e.g. Ferwerda, 1992; Horney, Osgood, & Haen Marshall, 1995; Rutter, Giller, & Hagell, 1998; Stattin, Romelsjö, & Stenbacka, 1997). Zamble and Quinsey (1997) concluded that substance abuse is one of the most important problem areas that differentiates between recidivists and non-recidivists. With regard to alcohol, Farrington (2003) found that heavy drinking at the age of 18 predicted continued offending after the age of 21. Flood-Page, Campbell, Harrington, and Miller (2000) found that using drugs at least once a month was related to persistent offending, and drinking at least five times a week was also predictive for re-offending.

Outgoing behaviour. Adolescent offenders tend to withdraw themselves from adult supervision in leisure time. They go out several evenings a week and go to a pub or hang around in the streets with friends (Farrington, 1995, 2003; Ferwerda, 1992; Flood-Page et al., 2000). This outgoing behaviour was also found in adult offenders. On the age of 32, persistent offenders still tend to spent more evenings of the week outside of the home (Farrington, 2003). Therefore, a high frequency of going out is considered to be a risk factor for recidivism.

Family Factors

Parental support. It has consistently been shown that a poor parent-child relation and a low level of parental support are related to the development and the continuation of criminal behaviour (e.g. Benda & Tollet, 1999; Lipsey & Derzon, 1998; Seydlitz & Jenkins, 1998). Other authors emphasized the potential positive influence of having a good relation with parents. Positive interactions and a good relationship between parents and child can function as a protective factor for delinquency and recidivism (Hawkins et al., 1998; Juang & Silbereisen, 1999; Meeus, Deković, & Noom, 1996).

Parental supervision. Poor parental monitoring and supervision is related to delinquency and persistent serious offending of adolescents (Flood-Page et al., 2000; Hoge, Andrews, & Leschied, 1996). Other studies draw attention to the protective function of good supervision. The ability of parents to supervise and control their children's behaviour can protect against involvement in delinquency or can inhibit delinquency, even among serious offenders (Deković, 1999; Meeus et al., 1996; Seydlitz & Jenkins, 1998).

Family criminality. Adolescents having criminal parents and or siblings are more likely to recidivate and persist in their criminal behaviour (Farrington, 2003; Flood-Page et al., 2000; Gudjonsson, 1982). Especially in adolescence, sibling criminality has a strong relation with violent behaviour (Hawkins et al., 1998). Parental criminality increases the chance on delinquency because of the parent as a criminal role model. But also parents' attitudes toward criminality do matter. Herrenkohl et al. (2000) found that parental positive attitudes toward delinquency in childhood increased the likelihood for adolescent delinquency substantially.

School/Work Factors

School performance. Poor school motivation and poor achievement are considered to be risk factors for delinquency and re-offending. Adolescents who perform poorly at school and have a negative attitude toward school are more likely to get involved in criminality than those who don't (Farrington, 2003; Hawkins et al., 1998; Herrenkohl et al., 2000; Stouthamer-Loeber et al., 2002). But also the potential protection of school factors has been accentuated. Studies on offender groups reveal that desisters from crime perform better in school than persisters. Desisters have higher grades, are more attached and more committed to

school than persisters (e.g. Ayers et al., 1999; Hoge et al., 1996; Laub, Nagin, & Sampson, 1998).

Unemployment. Especially studies on persistence and desistance revealed that desisters differentiate from persisters in the area of employment. Compared to desisters, persisters are more likely to be unemployed (Farrington, 1995; Flood-Page et al., 2000; Laub et al., 1998; May, 1999; Nagin, Farrington, & Moffit, 1995; Zamble & Quinsey, 1997).

Job satisfaction. While unemployment is a risk factor for recidivism, being employed has not shown to be necessarily protective for recidivism. Uggen (1999) hypothesized that there is a relation between quality of work and recidivism. Employment can be seen as an indicator for commitment to conventional society. Job satisfaction, performance, relations with co-workers, are aspects of quality that enhance bonding to the job and therefore bonding to society (Sampson & Laub, 1993; Weerman, 1998). Sampson and Laub (1993) found empirical evidence for this hypothesis. They found job stability (duration and performance) to be positive related to desistance. Following, it can be argued that having a job with poor satisfaction can be considered as a potential risk for recidivism because it decreases attachment and bonding to the job and society, and therefore encourages the continuation of criminal behaviour. The study of Flood-Page et al. (2000) indeed found that those who did not like their jobs, were more likely to commit criminal acts than those who liked their job a lot.

Future perspectives. Another aspect that is related to the subject of school and employment is expectations and goals for work and education. Ferwerda (1992) found that delinquent and non-delinquent adolescents differentiated in their expectations for the future. Delinquents were lacking of meaningful future perspectives compared to non-delinquents.

Peer Factors

Delinquent peer group. Delinquents tend to have delinquent friends, and delinquency of peers is one of the strongest predictors for delinquency (e.g. Bartollas, 2000; Blackburn, 1993, Farrington, 2003; Jessor et al., 1995; Rutter et al., 1998). Having delinquent friends is also related to persistence and desistance. Delinquent peer involvement in adolescence predicts continued offending into adulthood (Farrington, 1995, 2003; Flood-Page et al, 2000). Those who desisted

from crime, appeared to have more bonding to conventional peers, or abandoned their delinquent peer group (Ayers et al., 1999; Warr, 1998).

Non-deviant best friend. From the literature it also appears that especially best friends' delinquency is highly related to delinquency. For example, Dishion, Andrews, and Crosby (1995) found that arrest rates between adolescent antisocial boys and their best friend are quite similar. Furthermore, having positive relations with conventional peers is related to a decrease in re-offending or even desistance (Hoge et al., 1996; Jessor et al., 1995). Subsequently it can be argued that having a non-deviant best friend is a protective factor.

Support from partner. Marriage is an important protective factor for recidivism. However, it is not marriage per se that prevents for re-offending. It is the quality of the relationship that protects (Farral & Bowling, 1999; Laub et al., 1998; Rutter et al., 1998). Nagin et al. (1995) found that desisters had a better relationship with their wives than other criminal groups. Having a supportive partner or spouse is therefore considered to act as a protective factor. Subsequently it can be argued that having a worse or non-supportive relationship with the partner might be related to persistence and therefore regarded as a potential risk factor for re-offending.

Criminality of the partner. Antisocials tend to marry antisocial partners, and marriage to a deviant partner is associated with an increase in criminal activities (Rutter et al., 1998). Farrington (2003) found that those who married a convicted spouse kept committing criminal acts at the same level.

Economic Deprivation

Finances. Financial problems are a potential risk factor for recidivism. Lack of money urges the need to continue in criminal behaviour for financial gain. Empirical results have shown that recidivists have more often financial problems than non-recidivists (Blackburn, 1993; Farrington, 1995; May, 1999; Seydlitz & Jenkins, 1998; Zamble & Quinsey, 1997). In this study we considered low income and having debts to be indicators for financial problems.

Social Network

Significant other. Having a positive relationship with a significant other outside the nuclear family, is often mentioned as an important protective factor for the

development of problem behaviour. In research on protective factors for offenders, this aspect has not often been studied. In studies on resilience and more generally adolescent adjustment, however it is found that perceived support in the relationship with a significant other is an important predictor for adjustment (Lösel & Bliesener, 1994; Scholte, van Lieshout, & van Aken, 2001). So, we assume that the availability of a significant other outside the nuclear family is a protective factor for recidivism.

Aftercare. Aftercare for released offenders is intended to smoothen the transition between incarceration and re-entry in the community. Research results on the effects of these programs on recidivism are mixed. Some studies indicated a decrease in recidivism, others an increase or no differences with a control group (Altschuler, Armstrong, & MacKenzie, 1999; Ashford, Sales, & LeCroy, 2001).

It becomes more and more apparent, that it is especially an accumulation of risk factors that increases the likelihood of a negative outcome. It is argued that single factors as those we mentioned before, may have a relatively small effect on the outcome, whereas a combination of several risk factors may be a powerful predictor of outcome. Indeed, in several studies a cumulative effect of risk on problem behaviour and delinquency was found. Accordingly, the same cumulative effect of protective factors has been found on a positive outcome (Deković, 1999; Jessor et al., 1995; Stouthamer-Loeber et al., 2002). In the current study we examined both the relation of single risk and protective factors and the cumulative effect of risk and protective factors on recidivism. In doing so, we had to tackle two methodological issues we had been confronted with in the literature: the assessment of risk and protective factors, and the assessment of recidivism (occurrence versus severity).

In the literature on risk and protective factors, there is discussion on the issue whether risk and protective factors are conceptually different or not (e.g. Deković, 1999; Jessor et al., 1995; Rutter et al., 1998). Stouthamer-Loeber et al. (2002) stated that risk and protective factors can be opposite ends of one continuum. Extreme poles of the same variable can have different effects on different people. A negative score on a variable can have a risk effect for one person, and a positive score on the same variable can have a protective effect for another. Therefore, Stouthamer-Loeber et al. proposed a trichotomization of a variable distribution.

The lowest 25% scores are supposed to have a risk effect, the highest 25% scores a protective effect, and the 50% scores in between are considered to be neutral. We followed this approach, but some factors could not be trichotomised, because there was no neutral middle. For example, financial problems are present or not; there is no positive opposite end of financial problems. Consequently, some factors can only be dichotomised and are either risk or protective. We labelled factors as either risk or protective, based on the results of the literature search. A variable is considered to be a risk factor if in the literature it is emphasized that the likelihood of recidivism increases when the factor is present. For example, the presence of deviant friends increases the risk for recidivism; therefore it is considered to be a risk factor. The absence of this potential risk does not imply protection, but rather a neutral or no effect. A variable is protective when the likelihood of non-recidivism is heightened when the factor is present. For example, the presence of a significant other protects against recidivism. Again, absence does not imply risk.

The second issue concerns the assessment of recidivism. In studies on recidivism, often a dichotomy between recidivists and non-recidivists is applied. Those who committed one or more offences after release are considered to be re-offenders, and those who did not commit any offence after their release are regarded as desisters or non-recidivists. This dichotomy implies that recidivists can be looked upon as a homogenous group. However, it is questionable whether this is a proper assumption. For example, a person who re-offends by stealing a bike and a person who re-offends by committing an armed robbery, are both recidivists, but the severity of the committed offences varies significantly. Furthermore, the sample of offenders which is reported about in this study, consists of juveniles who were convicted for serious offences, ranging from burglary to murder. If someone, who has been convicted for murder, is caught on shoplifting after release, can he then be regarded as a recidivist? Therefore, we suggest that recidivism should not only be regarded as a dichotomy, but also the severity of recidivism must be taken into account.

RESEARCH QUESTIONS

The central aim of this study is to explore the relation between risk and protective factors in the environment after release and juvenile criminal recidivism. The questions we want to answer is whether the occurrence and

severity of recidivism can be explained by a) single risk and protective factors, and b) an accumulation of risk and protective factors.

METHOD

Sample

The sample consisted of 111 male adolescents who were released from "De Hunnerberg", a juvenile correctional institution in Nijmegen, the Netherlands. "De Hunnerberg" consists of two centres, a treatment centre and a detention centre. Boys are sent to the detention centre to serve out short sentences. Juveniles are sent to the treatment centre if they committed their crime due to a developmental disorder. They stay there for approximately two years.

In total 16 (31%) of the 52 released boys from the detention centre, and 45 (76%) of the 59 released boys from the treatment centre, consented to take part in this study. The other boys could not participate because of various reasons (e.g. not traceable, refused, mentally retarded). There were no significant differences between the respondents and the non-responders with regard to ethnicity, age at the end of detention and mean length of stay.

Four of the 61 respondents were excluded because data were incomplete, resulting in a final sample of 57. Of these, 54% had Western-European, 19% Northern-African, and 9% Surinamese origins, 2% came from the Netherlands Antilles, 5% from Turkey and 11% had diverse origins (e.g. African, South-American). The mean age of the participants was 19.23 years (sd = 2.22) and the mean length of stay in the institution was 21.52 months (sd=14.55). We found significant differences between the treatment group and the detention group with regard to age ($F=41.43$, $p<.00$) and length of stay ($F=61.38$, $p<.00$). The detention boys are in general younger ($M=16.82$ years) than the treatment boys ($M= 20.09$ years) and stayed on average 4 months in detention, compared to a mean of 28 months of the treatment boys. This difference in length of stay was expected because of the different aims of the two centres. The differences in age between the treatment and the detention group can be clarified by the fact that treatment boys stay longer in captivity than detention boys and therefore they are older at the time of measurement.

Procedure

We adjusted the length of the follow-up period to the differences in length of stay of boys in the treatment and in the detention centre. Approximately one year after their release from the treatment centre and six months after release from the detention centre, boys were approached by a familiar staff member of "De Hunnerberg". Seven staff members conducted the interviews. These staff members are no professional interviewers but their daily job is to prepare the boys for re-entry into the community after release. Therefore they are used to hold conversations with boys and their parents. We chose to use familiar staff members as interviewers because we suspected that this personal bond would heighten the trustworthiness of the information as the boys would be more unreserved and trustful to them. Furthermore, because the interviewers knew the boys and their histories, they were more aware of possible social desirable answers and were able to see through if someone tried to keep up appearances.

During the visit, the Follow-up Interview for Living circumstances (FIL; van Dam, Janssens, & De Bruyn, 2000) was carried out by the interviewer to assess risk and protective factors. When the interview had been finished, respondents were asked to fill out the Self-Report list for Delinquent Behaviour (SRDB; Boendermaker, 1998). Boys received a compensation of 23 euro. Interviewers were instructed by the first author and every first interview was accompanied by her.

Measures

Environmental Risk and Protective Factors

The Follow-up Interview for Living circumstances (FIL; van Dam, Janssens, & De Bruyn, 2000) was used to assess environmental risk and protective factors. The FIL is a semi-structured interview, that consists of 88 questions. The questions were constructed based on the outcome of the literature search. Scores for risk and protective factors were based on the outcome of the interview. All risk and protective variables were dichotomised: respondents received a score of 0 if the risk or protective factor was absent, and a score of 1 if the risk or protective factor was present.

In Table 3.1 (see appendix 1) the operationalisation of all risk and protective variables, examples of items and the definitions of the presence of risk and

protection are described[2]. As can be seen from Table 3.1 the number of items used to measure the several variables, varies considerably. For the sociological and behavioural oriented variables, a restricted number of questions was sufficient to obtain a measure for that specific risk or protective factor (e.g. drug and alcohol use, outgoing behaviour, future perspectives, non-deviant best friend). For instance the risk factor outgoing behaviour was measured by the question "How many evenings per week do you go to a pub?" Respondents were asked to answer this question on a 7-point scale (1= never, 2= a few times a year, 3= a few times a month, 4= once a week, 5= only weekends, 6= a few evenings a week, 7= every evening). Respondents who answered this question with a score of 6 or higher received a score 1 on the risk factor outgoing behaviour. Respondents with scores up to 5, received a score 0 on this risk factor.

For variables that referred to more psychologically oriented constructs, more items were needed to assess the underlying construct (e.g. parental support, criminal attitude, job satisfaction). For example, the variable 'criminal attitude' was measured by a scale consisting of 19 items. An example of an item of this scale is "What do you think of someone who has broken into a house?". All items had to be answered on a four-point scale (1= not bad at all, 2=not so bad, 3= bad, 4= very bad). Cronbach's alpha of this scale in the present study was .85. For each respondent a mean score on this scale was computed. This procedure was applied to each type of the construct scales. In order to obtain scores on these risk and protection factors, the lowest 25% scores of the total range were considered as risk scores, the highest 25% scores as protection. Respondents who had a mean score that belonged to the lowest 25% scores received a score 1 on that particular risk factor. Respondents with a mean score that belonged to the highest 25% scores, received a score 1 on that particular protective factor. Respondents with a mean score that belonged to the 50% middle scores received score 0 on both the risk and protective factor.

Two variables were assessed by an open question (moving to another neighbourhood and aftercare). Answers were categorized afterwards. For example the variable 'moving to another neighbourhood' was measured by the open question "Where did you went to after your release and why?" Answers were coded

[2] Strictly speaking, the child characteristics we listed are not environmental factors. The reason why we treated them as environmental factors is that they are strongly linked up with the social habitat of our subjects.

in three categories: went to old neighbourhood, went to a new neighbourhood because friends live there, went to a new neighbourhood because of the availability of work and housing, or because of the wish to start a new life. To obtain a measure for protection, respondents with answers of the third category received a score 1 on the protective factor moving to another neighbourhood. Respondents with answers of the first and second category received score 0 on this protective factor.

Occurrence and Severity of Recidivism

Self-reported recidivism was assessed by the Self-Report list for Delinquent Behaviour (SRDB; Boendermaker, 1998). The SRDB consisted of 20 items each representing a criminal act. For each act, respondents were asked whether they committed this act since their release from the juvenile institution. The criminal offences varied from vandalism and burglary, to rape and dealing in drugs. Respondents were considered as recidivists if they had committed one or more of the 20 acts mentioned in the SRDB.

To assess severity of recidivism, the following procedure was carried out. Every act was rated on a three-point scale, according to the level of severity which depended on the maximum sentence according to the Dutch penal code. Score one was assigned to non-violent offences with a maximum sentence of 36 months, (7 offences, e.g. vandalism, shoplifting, bicycle theft), score two to offences with a minimum sentence of 37 months and a maximum of 71 months (7 offences, e.g. threatening, car theft, drugs traffic), and score three to offences with a maximum sentence of 72 months or higher (6 offences, e.g. burglary, rape, armed robbery). For each respondent, a sum score was computed over these 20 acts, with a possible range of 0-39.

RESULTS

Preliminary Analyses

It appeared that 75% of the respondents had committed one or more delinquent acts after release. There was a significant difference between the percentage recidivists of the treatment and the detention centre ($\chi^2 = 4.35$, $p<.05$); 81% of the

boys of the treatment centre recidivated, compared to 53% of the boys from the detention centre.

To test whether boys of the treatment and the detention centre differed with regard to risk and protective factors chi-square was used. Analyses revealed only one significant difference. The protective factor negative criminal attitude was higher for boys of the detention than for boys of the treatment centre (χ^2= 5.37, p<.05). The number of significant differences is nearly as low as might be expected on the basis of chance. Therefore we did not differentiate between boys of the treatment and detention centre on the following analyses.

Occurrence of Recidivism

Single Risk and Protective Factors

Can differences between recidivists and non-recidivists be explained by single risk and protective factors? In Table 3.2 relations between recidivism and risk and protective factors are presented. Chi-square was used to test for significant differences.

Table 3.2
Percentage Recidivists when Risk or Protective Factors are Absent or Present (N=57).

	Factor absent		Factor present		
Variables	% recidivists	n	% recidivists	n	χ^2
Risk factors					
Child characteristics					
Positive criminal attitude	66	29	100	13	6.02*
Drugs abuse	65	26	94	16	5.22*
Alcohol abuse	67	28	93	14	4.05*
Outgoing behaviour	70	32	91	10	2.09
Family factors					
Poor parental support	66	27	94	15	4.62*
Poor parental supervision	76	40	50	2	1.24
Family criminality	74	26	73	16	.02
School/work					
Poor school performance	72	38	100	4	1.54
Unemployment	74	34	73	8	.00
Poor job satisfaction	71	34	89	8	1.27
Lack of future perspectives	75	38	67	4	.17

Table 3.2 (*continued*)

	Factor absent		Factor present		
Variables	% recidivists	n	% recidivists	n	χ^2
Peers					
Deviant peers	70	19	77	23	.29
Poor support partner	73	35	78	7	.09
Criminality partner	71	36	100	6	2.40
Economic deprivation					
Low income	82	32	56	10	4.46*
Debts	65	24	90	18	4.23*
Protective factors					
Child characteristics					
Negative criminal attitude	81	35	50	7	5.37*
Moving to a.o. neighbourhood	76	38	57	4	1.13
Family factors					
Good parental support	74	35	67	8	.39
Good supervision	76	38	57	4	1.13
School/work					
Good school performance	73	38	80	4	.11
Good job satisfaction	76	38	57	4	1.13
Realistic future perspectives	77	36	60	6	1.17
Peers					
Non-deviant best friend	75	36	67	6	.27
Good support partner	72	36	86	6	.60
Social network					
Availability significant other	68	19	79	23	.96
Aftercare	81	33	56	9	3.49

*p<.05

Risk factors in the domains of child characteristics (positive criminal attitude, drugs and alcohol abuse) and family factors (poor parental support) were significantly related to a higher percentage of recidivists. In the domain of economic deprivation, the factor debts was related to a higher percentage of recidivists and low income was related to a lower percentage of recidivists. With regard to the protective factors, only the presence of a negative criminal attitude (child characteristics) was related to a lower percentage of recidivists. None of the risk or protective factors in the other domains appeared to be related to the occurrence of recidivism.

Accumulation

To analyse whether the accumulation of risk and protective factors is related to recidivism after release, we computed the total number of risk and protective factors for each respondent. In Table 3.3 the mean numbers of risk and protective factors for both recidivists and non-recidivists are presented. T-tests were used to test for significant differences. Recidivists have significantly more risk factors and less protective factors than non-recidivists.

Table 3.3
Mean Number of Risk and Protective Factors of Recidivists and Non-Recidivists.

	Non-recidivists		Recidivists		
	M	SD	M	SD	t
Number of risk factors	2.07	2.09	4.14	2.66	-2.73**
Number of protective factors	2.80	1.52	1.93	1.30	2.14*

*p<.05, **p<.001

Severity of Recidivism

Single Risk and Protective Factors

To examine whether severity of recidivism was related to the presence or absence of risk and protective factors, mean severity scores were computed. The general mean score on severity of recidivism is 4.51 (sd=5.37), with no significant differences between boys of the treatment and boys of the detention centre. In Table 3.4 the mean severity of recidivism scores for risk and protective factors are presented. T-tests were used to test for significant differences.

All risk factors in the domain of child characteristics and peers were related to severity of recidivism. Two risk factors in the family factors domain (poor parental support and family criminality), and one factor in the economic deprivation domain (debts) were also related to severity. Adolescents who experienced these risk factors after release committed more severe crimes than adolescents who did not have these risk factors. None of the risk factors in the school domain appeared to be important in explaining severity of recidivism. With regard to protective factors it appeared that factors in the domains of child characteristics (negative criminal attitude), peers (non-deviant friend) and social network (receiving aftercare) were

related to recidivism. Adolescents who experienced those protective factors after release committed less severe crimes than adolescents who did not experience those protective factors.

Table 3.4
Means of Severity of Recidivism when the Risk and Protective Factors are Present or Absent.

	Factor absent			Factor present			
Variables	M	SD	N	M	SD	N	t
Risk factors							
Child characteristics							
Positive criminal attitude	2.89	3.44	44	10.00	7.05	13	-5.03**
Drugs abuse	2.83	3.58	40	8.47	6.77	17	-4.12**
Alcohol abuse	2.86	3.69	42	9.13	6.64	15	-4.51**
Outgoing behaviour	3.54	4.24	46	8.55	7.62	11	-2.96**
Family factors							
Poor parental support	3.24	4.18	41	7.75	6.73	16	-3.05**
Poor parental supervision	4.55	5.40	53	4.00	5.66	4	-.80
Family criminality	3.26	3.36	35	6.50	7.19	22	-2.44*
School/work							
Poor school performance	4.38	5.51	53	6.25	2.63	4	-.67
Unemployment	4.41	5.04	46	4.91	6.82	11	-.27
Poor job satisfaction	4.48	5.78	48	4.67	2.29	9	-.10
Lack of future perspectives	4.16	4.77	51	7.50	9.12	6	-1.46
Peers							
Deviant peers	2.81	3.58	27	6.03	6.24	30	-2.35*
Poor support partner	3.81	4.55	48	8.22	7.86	9	-2.35*
Criminality partner	3.31	3.78	51	14.67	6.41	6	-6.43**
Economic deprivation							
Low income	5.36	5.30	39	2.67	5.18	18	1.80
Debts	3.38	4.77	37	6.60	5.89	20	-2.24*
Protective factors							
Child characteristics							
Negative criminal attitude	5.47	5.57	43	1.57	3.41	14	2.46*
Moving to a.o. neighbourhood	4.90	5.58	50	1.71	2.06	7	1.49
Family factors							
Good parental support	5.02	5.61	45	2.58	3.94	12	1.41
Good supervision	4.34	4.87	50	5.71	8.54	7	-.63

Table 3.4 (*continued*)

	Factor absent			Factor present			
Variables	M	SD	N	M	SD	N	t
School/work							
Good school performance	4.75	5.54	52	2.0	1.58	5	1.10
Good job satisfaction	4.54	5.37	50	4.29	5.79	7	.12
Realistic future perspectives	5.09	5.67	47	1.80	2.20	10	1.79
Peers							
Non-deviant best friend	5.15	5.60	48	1.11	1.27	9	2.14*
Good support partner	4.82	5.62	50	2.29	2.06	7	1.18
Social network							
Availability significant other	4.64	6.75	28	4.38	3.70	29	.18
Aftercare	5.46	5.93	41	2.06	2.17	16	2.22*

*p<.05, **p<.001

Accumulation

To determine whether the accumulation of risk and protective factors is related to severity of recidivism, correlations between number of risk factors, number of protective factors and severity of recidivism were computed (Table 3.5).

Table 3.5
Correlations between Number of Risk and Protective Factors and Severity of Recidivism.

	1	2	3
1. Number of risk factors	--		
2. Number of protective factors	-.52**	--	
3. Severity of recidivism	.73**	-.50**	--

**p<.001

A high number of risk factors is related to a high level of severity of recidivism; a high number of protective factors is associated with a low level of severity. Furthermore, there is a strong negative relation between the number of risk factors and the number of protective factors. A high number of risk factors is accompanied by a low number of protective factors.

Additional Analyses

From both Table 3.2 and Table 3.4 it appeared that risk and protective factors in the school/work domain were not related to the occurrence and severity of recidivism. These results are surprising because in the literature on delinquency and recidivism it is argued that having a regular daily occupation (school or work) is important in preventing recidivism. We supposed that the actual living situation of the adolescents might have a moderating influence on the relation between risk and protective factors in the school/work domain and recidivism. For adolescents who live with their parents most likely the parents will take care of them, supervise and protect them and provide some sort of daily structure. On the contrary, adolescents who live on their own have more responsibilities to take care of. They have to earn a living, provide their own daily structure, and there is no one who will take care off them when they are in lack of money. Therefore, we argued that for adolescents who live on their own, risk and protective factors of the school/work domain would have an influence on the occurrence and severity of recidivism. So, we expected an interaction effect of actual living situation (with parents, or on their own) and factors of the school/work domain on the occurrence and severity of recidivism. We conducted a number of two-way ANOVA's in order to test this hypothesis. With regard to the occurrence of recidivism, two significant interaction effects appeared (see Table 3.6).

For adolescents who lived with their parents the risk factor lack of realistic future perspectives is related to a lower percentage of recidivists. For respondents who live on their own, this risk factor does not differentiate between recidivists and non-recidivists. With regard to the protective factor good job satisfaction it appeared that adolescents who live on their own are less likely to recidivate when they are satisfied with their job than those who are not. For respondents who lived with their parents, good job satisfaction does not differentiate between recidivists and non-recidivists.

With regard to severity of recidivism three significant interaction effects emerged (see Table 3.6). Adolescents who lived on their own and were unemployed or lacking of realistic future perspectives recidivated more severely than respondents who lived on their own and did not have these risk factors. For respondents who lived with their parents, the factors unemployment and lack of future perspectives were not related to severity.

Table 3.6

Percentage Recidivists and Mean Scores on Severity of Recidivism when Risk and Protective Factors of the School/Work domain are Present or Absent.

Variables	Living with parents				Living on their own				
	Factor absent		Factor present		Factor absent		Factor present		
	% recidivists	n	% recidivists	n	% recidivists	n	% recidivists	n	F interaction
Occurrence									
Risk factor									
Lack of realistic future perspectives	69	32	0	2	84	19	100	4	4.83*
Protective factor									
Good job satisfaction	63	30	75	4	95	20	33	3	4.58*
	M	n	M	n	M	n	M	n	
Severity									
Risk factor									
Unemployment	4.27	26	2.13	8	4.60	20	12.33	3	6.85*
Lack of realistic future perspectives	4.00	32	.00	2	4.42	19	11.25	4	5.40*
Protective factor									
Good job satisfaction	3.30	30	7.25	4	6.40	20	.33	3	5.64*

* $p<.05$

Furthermore, good job satisfaction is related to less severe recidivism for respondents who lived on their own; for adolescents who lived with their parents, this protective factor is associated with more severe recidivism.

DISCUSSION

Our first research question concerned the occurrence of recidivism. It was shown that the general recidivism percentage was high; 75% of the adolescents committed one or more delinquent acts after their release. Risk factors in three domains (child characteristics, family factors and economic deprivation) appeared to be related to the occurrence of recidivism. Also, in the child characteristic domain, one protective factor, negative attitude toward criminal behaviour, differentiated between recidivists and non-recidivists. Analyses on the accumulation of risk and protective factors revealed that recidivists had more risk factors and less protective factors than non-recidivists.

We also found a relation between risk and protective factors and severity of recidivism. Besides the risk factors of the domains that were related to the occurrence of recidivism, also factors of the peer domain emerged as being related to the severity of recidivism. Factors of the school/work domain were not related to severity of recidivism.

With regard to the protective factors, it was shown that besides the factor having a negative criminal attitude in the domain of child characteristics, also one factor of the peers domain, having a non-deviant best friend, and one factor of the social network domain, receiving aftercare, significantly lessened the chance of serious recidivism. At last, we found that accumulation of both risk and protective factors in the post release living environment was significantly related to severity of recidivism.

Summarizing, it can be stated that some risk and protective factors in the post release living situation are not related to occurrence of recidivism, but they do matter with regard to severity of recidivism. These findings confirm our suggestion that looking at severity of recidivism might reveal a more comprehensive picture of factors that are related to recidivism. Furthermore, it appeared that less protective factors were related to both occurrence and severity of recidivism

compared to the number of risk factors. Finally, accumulation of risk and protective factors was related to both the occurrence and severity of recidivism.

Unexpected were the findings with regard to the domains of economic deprivation and school/work. Economic deprivation consists of two factors: low income and debts. From the analyses it appeared that contrary to our expectations, low income was related to a decreased chance of occurrence of recidivism. This indicates that having a low income is not a risk factor for recidivism. Instead, these results indicate that having a high income increased the chance for adolescents to recidivate. Perhaps having a low income is not uncommon in this sample of adolescents. Most adolescents are low educated, or even in school, or are supported by their parents. Having a high income might reflect a more delinquent way of life, by earning money in illegal ways.

Second, the finding that neither unemployment, nor job satisfaction, school performance or future perspectives were related to recidivism is contradictory to what is generally stated in literature. Additional analyses were conducted to examine possible interaction effects of these factors and the actual living situation of adolescents on recidivism. For three factors, interaction effects emerged. These results partially confirmed our hypothesis that risk and protective factors regarding the school/work domain are more important for adolescents who live on their own. Being unemployed or having lack of realistic future perspectives while living on their own, increases the likelihood of severe recidivism. Also, living on their own and having a job that provides satisfaction, lessens the occurrence and chance of severe recidivism. Unexpected were the results for adolescents who lived with their parents; being unemployed decreases the likelihood of severe recidivism, lack of realistic future perspectives decreases both the occurrence and severity, and having a satisfactory job heightens the chance for severe recidivism. However these results must be interpreted with caution, due to the low number of respondents which remain in especially the risk and protective categories, after the actual living situation is taken into account. Further research on larger samples is needed to draw final conclusions on the moderating effect of actual living situation on the relation between risk and protective school and work factors.

Practical Implications

In daily practice of juvenile correctional institutions in the Netherlands, it is often stated that a girlfriend or partner, housing and work are the most important aspects for successful reintegration of adolescent boys in the community. Results of this study partially confirmed this point of view. Deviancy of the partner or a less supportive relation with the partner appeared to enhance the chance of severe recidivism. These results are conclusive with findings in studies on persistence and desistance in delinquency (e.g. Laub et al., 1998). With regard to housing, we examined the protective factor moving to another neighbourhood. This was not related to the occurrence and severity of recidivism. This result did not confirm results found in other studies (e.g. Buikhuisen & Hoekstra, 1974). The additional analyses on the school/work domain revealed that risk factors regarding unemployment and job satisfaction are only important risk factors for adolescents who live on their own. In conclusion, it can be stated that having a partner, moving to another neighbourhood and work are not guarantees for successful reintegration. In fact our results revealed that especially risk and protective factors in the domain of child characteristics are important in both occurrence and severity of recidivism. The attitude of the adolescent regarding criminal behaviour, drugs- and alcohol abuse are important factors in both the occurrence and the severity of recidivism. For youth care on juvenile delinquents these results imply that in order to prevent recidivism or at least prevent severe recidivism, these factors especially need attention.

Furthermore results on the accumulation of risk and protective factors imply that not only single factors are important in the prevention of recidivism, but it is also important to diminish the total number of risk factors and to enhance the number of protective factors. For detention centres or youth care on juvenile delinquents these results indicate that it is important to make an overview of potential risk and protective factors in the post release situation for each individual. Subsequently, interventions must aim at decreasing the total number of risk factors and strengthen the protective factors.

Results of this study support the notion that receiving aftercare and being satisfied about it, is important in reducing severity of recidivism after release. Therefore, efforts must be made to intensify aftercare in the post release situation, both because it has a direct effect on reducing recidivism, but also

because it can be regarded as a continued intervention aimed at reducing the number of risk and protective factors after the adolescents' actual re-entry in the community.

Finally, this study was conducted in a particular juvenile detention centre for correctional treatment in the Netherlands. The small number of respondents in our study must be taken into account too. Results must therefore be interpreted with caution and further studies on larger samples and more institutions are necessary to draw more final conclusions. Furthermore, significant factors found in this study, are related to the living situation approximately one year after release. It would be interesting to follow samples like these for a longer period of time in order to gain insight in risk and protective factors that will effect recidivism in the long run.

Chapter 4

PEN, BIG FIVE, JUVENILE DELINQUENCY AND CRIMINAL RECIDIVISM

Coleta van Dam, Jan M.A.M. Janssens and Eric E.J. De Bruyn

The aim of this study was to examine which of the two personality models, PEN or Big Five, differentiates best between Dutch juvenile offenders (n=96) and college students (n=204), between Dutch self-reported recidivists (n=43) and non-recidivists (n=14), and between officially recorded recidivists (n=37) and non-recidivists (n=24). Students (mean age = 17.23 years) and offenders (mean age = 18.63 years) filled out the Eysenck Personality Questionnaire Revised and the Short Big Five Questionnaire. Occurrence and severity of recidivism were measured by a self-report questionnaire and by official police records. Students were higher than offenders on PEN's Extraversion and the Big Five dimensions Agreeableness and Openness. PEN's Extraversion appeared to be higher in officially recorded recidivists compared to non-recidivists. PEN's Psychoticism, Big Five's Neuroticism and Agreeableness differentiated self-reported recidivists from non-recidivists. Only PEN's Psychoticism predicted severity of self-reported recidivism. Proposals for future research in recidivism are formulated.

In press: Personality and Individual Differences

INTRODUCTION

In this study relationships among personality, delinquency and recidivism are examined from the perspective of two influential personality theories: Eysenck's PEN model and the Big Five model. Eysenck's PEN model (Eysenck, 1977) is one of the few theories that explicitly related personality traits to criminality (see Eysenck & Gudjonsson, 1989). However, this model has not often been used to explain recidivism after a period of incarceration.

The Big Five model (see Goldberg, 1990) is relatively new, and seems to be the dominant model of personality traits today. It is to some extent related to the PEN model, but has scarcely been used to study relations between personality and delinquency or recidivism. In this study we analysed which of both models (PEN or Big Five) is better able to differentiate between an offender sample and a normal sample of college students, and between recidivists and non-recidivists.

According to Eysenck (1977, 1998) the three basic PEN dimensions of personality (Psychoticism, Extraversion and Neuroticism) are related to physiological mechanisms in the brain and central nervous system (CNS). Through the working of the CNS and the related conditioning processes (Eysenck & Gudjonsson, 1989), it could be convincingly theorized that delinquents should score high on the PEN dimensions. However full empirical support for Eysenck's hypothesis has not been found. Studies are conclusive in their findings that high Psychoticism is always involved in criminality, regardless of age, and both in offender as well as in normal samples. Mixed results though, have since long been found for Neuroticism and Extraversion (Blackburn, 1993). Some studies found high Psychoticism and high Neuroticism to be associated with juvenile delinquency in both offenders (Romero, Angeles Luengo, & Sobral, 2001) and college students (Heaven & Virgen, 2001). Other studies found Psychoticism and Extraversion instead of Psychoticism and Neuroticism to be positively related to juvenile delinquency in offender samples (Aleixo & Norris, 2000) and normal samples (Heaven, 1996). Daderman (1999) found Psychoticism, Extraversion and Neuroticism to be significantly higher in juvenile offenders compared to a non-delinquent control group. In another study of Daderman (Daderman, Wirsen Meurling, & Hallman, 2001) only differences with regard to Extraversion were found, while Morizot and Le Blanc (2003) concluded that antisocial individuals are not typically different in this domain.

In research on relations between personality and delinquency, less attention has been paid to recidivism. Recidivism might be considered as a persistent form of delinquency. Only one study examined the relation between the PEN dimensions and juvenile recidivism. Eysenck and Eysenck (1974) measured Psychoticism, Extraversion and Neuroticism of 187 boys in a juvenile detention centre. Approximately three years later, reconviction rates of these boys were checked. Non-recidivists were significantly lower on Extraversion. No significant differences were found with regard to Psychoticism and Neuroticism.

The Big Five model (Goldberg, 1990) also includes Extraversion and Neuroticism, but next to Extraversion and Neuroticism also Agreeableness, Conscientiousness and Openness. Empirical results of several studies have shown that Extraversion and Neuroticism of both models show high resemblance and that Psychoticism is negatively related to Agreeableness and Conscientiousness (Eysenck, 1992; Costa & McCrae, 1992). The state of Openness is less clear. Eysenck (1991, 1992) considered Openness to be part of Psychoticism, but empirical results did not support this hypothesis (Avia, Sanz, Sánchez-Bernardos, Mártinez-Arias, Silva, & Grana, 1995; Scholte & De Bruyn, 2004). Saggino (2000) and Scholte and De Bruyn (2004) suggested that Openness might be part of Eysenck's Extraversion. Others mean that Openness is not measured in Eysenck's model (Costa & McCrae, 1995).

We found three studies that reported on relations between the Big Five and self-reported delinquent behaviour in non-clinical samples. John, Caspi, Robins, Moffitt, and Stouthamer-Loeber (1994) found that delinquent boys (12-13 years old) who reported burglary, drugs dealing and strong arming behaviour, scored lower on Agreeableness, Conscientiousness and Openness and higher on Extraversion than non-delinquent boys. Heaven (1996) studied a group of 16-19 year old students and found Neuroticism to be positively, and Conscientiousness and Agreeableness to be negatively related to self-reported vandalism. Van Aken, van Lieshout, and Scholte (1998) described three personality types in adolescents, based on a cluster analysis of Big Five scores: Undercontrollers, Overcontrollers and Resilients. The three types were each divided into two subtypes, and all six subtypes were compared on self-reported delinquent behaviour. The most delinquent subtype, the antisocial undercontrollers, was characterized by extremely low scores on Agreeableness and

Conscientiousness, and moderate scores on Extraversion, Openness and Neuroticism compared to resilient adolescents.

As far as we know, no study reported on relations between the Big Five and juvenile recidivism. As it stands now, the Big Five model seems not to offer greater power in revealing personality-criminality associations than the PEN model, but we lack a sufficient number of studies to draw firm conclusions. Therefore, the primary aim of our study was to enlarge the body of knowledge by comparing the power of both models in differentiating between juvenile offenders and a normal sample of college students, and between juvenile recidivists and non-recidivists. We also wanted to tackle two methodological issues we had met in studying the literature: the assessment of delinquent behaviour (self-report versus official records) and the parameters used to assess recidivism (occurrence versus severity).

In studies on delinquency and recidivism, there is discussion on the advantages and disadvantages of self-reported delinquent behaviour and official records (see Babinski, Hartsough, & Lambert, 2001). The most important limitation of self-reported delinquent behaviour is the possibility of socially desirable answers. Because of the (expected) unwillingness of respondents to report on severe offences, self-report lists often address the less serious forms of crime. The most important limitation of official records is that they do not report on undetected crime, the issue of dark number. So, in this study both self-reported offences and official criminal records were used to measure recidivism.

The other issue concerns the assessment of recidivism. In studies on recidivism, often a dichotomy between recidivists and non-recidivists is applied. Those who committed one or more offences after release, are considered to be re-offenders, and those who did not commit any offence after release are regarded as non-recidivists. This dichotomy implies that recidivists can be looked upon as a homogenous group. However, it is questionable whether this is a proper assumption. For example, a person who re-offends by stealing a bike and a person who re-offends by committing an armed robbery, are both recidivists, but the severity of the committed offences varies considerably. Therefore, in the present study both parameters of recidivism, occurrence and severity, were used.

According to the aims of this study, we formulated three research questions. 1) Which model, PEN or Big Five, differentiated best between juvenile offenders and a sample of college students? 2) Which model, PEN or Big Five, predicted best

the occurrence of recidivism? 3) Which model, PEN or Big Five, predicted best the severity of recidivism?

METHOD

Participants

Offender Sample

The offender sample consisted of 96 male adolescents who had been convicted for a serious criminal offence (48% for a violent property crime, 19% burglary or theft, 14% homicide, 8% vandalism or fire setting, 7% violence against persons and 4% for other crimes). To serve out their sentence, they were placed in "De Hunnerberg", a juvenile detention centre for correctional treatment located in Nijmegen, the Netherlands. The treatment program in "De Hunnerberg" is based on principles of environmental therapy and learning theory. Environmental therapy provides a general framework from which rules are generated for all boys. These rules mainly concern aspects of daily structure, like waking-up times, behaviour rules during mealtimes. Individual treatment is guided by learning theory. New behaviour is learned by rewarding desired behaviour and by ignoring undesired behaviour. An important aspect of the individual therapy is an analysis of the committed offence. It is examined which factors triggered the boy to commit a specific offence. Following goals are formulated to change the boys' behaviour in comparable situations.

In 36% of the offender sample, assessment took place during detention, 64% of the sample was assessed one year after their release from the detention centre. This last group of 61 released offenders was used to analyse relations between personality and recidivism[3]. In fact, we approached 111 released offenders, but 50 could not participate because of various reasons (not traceable, refused, mentally retarded). We did not find significant differences between respondents and non-respondents with regard to age, ethnicity and mean length of stay.

Age of the total sample was between 13 and 25 years old (mean = 18.69, sd=2.20). With regard to background, 48% had Western-European, 17% Northern-

[3] Four respondents did not fill out the self-report questionnaire on delinquent behaviour. Since we disposed of official criminal records of these respondents, they were not removed from the analyses. Therefore results regarding self-reported recidivism report on 57 instead of 61 respondents.

African, 13% Surinamese and 22% had diverse origins (e.g. Netherlands Antilles, African, South-American).

College Student Sample

This sample consisted of 204 male adolescents attending vocational training college in the region of Nijmegen, the Netherlands. Age varied between 15 and 24 years (mean= 17.23 sd=1.32). Vocational training colleges were selected because of the similarity with the offender group with regard to age and low educational level.

Measures

EPQ-R

The Eysenck Personality Questionnaire Revised (EPQ-R; Eysenck, Eysenck, & Barrett, 1985) was used to assess the PEN dimensions. The EPQ-R consists of 100 yes/no items, of which 32 items represent the Psychoticism, 24 items the Neuroticism and 23 items the Extraversion dimension. The remainder 21 items form the Lie scale. The items of the Lie scale were excluded from the analyses in this study. Measures for Psychoticism, Extraversion and Neuroticism were obtained by computing sum scores over the items of each scale. Cronbach's alpha's were .72 (offenders) and .62 (students) for Psychoticism; .73 (offenders) and .71 (students) for Extraversion; .80 (offenders) and .78 (students) for Neuroticism.

SBF

The dimensions of the Big Five were measured by the Short Big Five Questionnaire (SBF; Gerris et al., 1998). The SBF consists of 30 adjectives which represent the scales Extraversion, Emotional Stability, Conscientiousness, Agreeableness and Resourcefulness. The scale Emotional Stability corresponds with reversed Neuroticism, Resourcefulness with Openness. For reasons of convenience, in further analyses, we used the terms Neuroticism and Openness. Scores on the scale Emotional Stability were recoded.

Respondents were asked to answer on a seven-point scale whether the 30 adjectives are applicable to them (1= totally not applicable; 7= totally applicable). Each of the five dimensions is assessed by six items and mean scores for each dimension were computed. Cronbach's alpha's were .71 (offenders) and .71

(students) for Extraversion; .75 (offenders) and .73 (students) for Neuroticism; .74 (offenders) and .75 (students) for Conscientiousness, .82 (offenders) and .72 (students) for Agreeableness; .64 (offenders) and .66 (students) for Openness.

SRDB

Self-reported recidivism of the released offender group was measured by the Self-report list for Delinquent Behaviour (SRDB; Boendermaker, 1998). The SRDB consisted of 20 items each representing a criminal act. For each act, respondents were asked whether they committed this act since their release from the juvenile institution. The criminal offences varied from vandalism and burglary, to rape and dealing in drugs. Respondents were considered as recidivists if they had committed one or more of the 20 acts mentioned in the SRDB.

To assess severity of recidivism, the following procedure was carried out. Every act was rated on a three-point scale, according to the level of severity which depended on the maximum sentence according to the Dutch penal code. Score one was assigned to non-violent offences with a maximum sentence of 36 months, (7 offences, e.g. vandalism, shoplifting, bicycle theft), score two to offences with a minimum sentence of 37 months and a maximum of 71 months (7 offences, e.g. threatening, car theft, drugs traffic), and score three to offences with a maximum sentence of 72 months or higher (6 offences, e.g. burglary, rape, armed robbery). For each respondent, a sum score was computed over these 20 acts, with a possible range of 0-39.

Criminal Records

Official criminal records were requested from the Criminal Justice Department of the Ministry of Justice. These files contain all committed offences that were sent to court. For all released offenders criminal record files were obtained with a minimum follow-up period of 7 months, and a maximum follow-up period of 52 months (mean 29 months). Each criminal offence recorded in this file after the date of release from the detention centre was regarded as recidivism. To determine a measure of severity of recidivism, for each offence the maximum sentence according to the Dutch penal code was registered. A mean score of severity of recidivism was obtained by summing the maximum sentences of all re-offences and dividing this score by the total number of offences after release.

Procedure

With regard to the detained offender group, questionnaires were administered to them by their teachers during educational training hours. In the released offender group, questionnaires and instructions were sent by post, and collected by an interviewer. During the visit, respondents were asked to fill out the Self-Report list for Delinquent Behaviour (SRDB).

Questionnaires were administered to the college student group, during classroom hours. All respondents took part voluntarily, and anonymity and confidentiality were guaranteed.

RESULTS

Preliminary Analyses

In Table 4.1 correlations between the dimensions of both instruments are presented for college students and offenders. Extraversion and Neuroticism of the EPQ-R are positively related to Extraversion and Neuroticism of the SBF in both samples. Psychoticism of the EPQ-R is negatively related to both Conscientiousness and Agreeableness of the SBF. We found a significant negative correlation between Openness and Psychoticism, but only for offenders. A significant correlation between Openness of the SBF and Extraversion of the EPQ-R was found in both samples.

Table 4.1
Correlations Between the Dimensions of the EPQ-R and the SBF for College Students (N=204) and Offenders (N=96).

	EPQ-R					
	Extraversion		Neuroticism		Psychoticism	
SBF	*St*	*Of*	*St*	*Of*	*St*	*Of*
Extraversion	.47**	.45**	-.27**	-.37**	-.00	-.25**
Neuroticism	-.12	.01	.53**	.49**	.07	.22**
Conscientiousness	.06	-.03	.07	-.29**	-.31**	-.27**
Agreeableness	.15*	.26**	-.08	-.15	-.28**	-.39**
Openness	.29**	.26*	.03	.03	-.06	-.21**

*p<.05, ** p<.01 *St* = college students; *Of* = offenders

Analysis of the concordance in occurrence of officially recorded and self-reported recidivism revealed a tendency (χ^2= 3.50, p<.10). With regard to severity, we found a significant correlation between severity of self-reported and officially recorded recidivism (r=.44, p<.01).

Differentiating College Students from Offenders

In order to examine whether the Big Five and/ or the PEN-model distinguished offenders from college students, two MANOVA's were conducted. In Table 4.2 mean scores on the personality dimensions of offenders and college students, univariate and multivariate F-ratio's and explained variances (eta's) are presented. The multivariate F was significant for both models, indicating that both models are able to differentiate between college students and offenders.

Table 4.2
Multivariate Analysis of Variance for the PEN and Big Five Dimensions in College Students (N=204) and Offenders (N=96).

	College students		Offenders			
	M	SD	M	SD	F	η^2
PEN					3.15*	.03
Extraversion	16.21	3.63	14.82	3.88	9.08**	.03
Neuroticism	8.88	4.50	9.19	4.78	.29	.00
Psychoticism	10.64	3.89	10.98	4.56	.44	.00
Big Five					4.30**	.07
Extraversion	4.67	1.07	4.66	1.09	.00	.00
Neuroticism	3.27	1.06	3.25	1.14	.83	.00
Conscientiousness	4.63	1.04	4.66	1.08	.06	.00
Agreeableness	5.37	.86	5.05	1.10	7.76**	.03
Openness	4.96	.92	4.48	1.01	16.49**	.05

*p<.05, ** p<.01

Univariate analyses revealed that college students scored significantly higher on PEN's Extraversion than offenders. No significant differences were found in Extraversion of the Big Five model and Neuroticism of both models. Analyses on Psychoticism, Conscientiousness and Agreeableness showed that college students scored significantly higher on Agreeableness, but not on Psychoticism and

Conscientiousness. College students also scored significantly higher on Openness than offenders.

Differentiating Recidivists from Non-Recidivists

To examine which model, PEN or Big Five, differentiated best between recidivists and non-recidivists, MANOVA's were carried out. In Table 4.3 mean scores on the PEN and Big Five dimensions of recidivists and non-recidivists, univariate and multivariate F-ratio's and explained variances (eta) are reported. Results are presented separately for officially recorded recidivism and self-reported recidivism.

With regard to official recorded recidivism, neither PEN or Big Five could significantly differentiate between recidivists and non-recidivists; for both models the multivariate F was not significant. Univariate analyses revealed only one significant difference: recidivists scored significantly higher than non-recidivists on PEN's Extraversion.

Table 4.3
Multivariate Analysis of Variance for the PEN and Big Five Dimensions in Recidivists and Non-Recidivists According to Official Records and Self-Report.

	Non-recidivists		Recidivists			
	M	SD	M	SD	F	η^2
Official criminal records						
N	24		37			
PEN					2.50	.12
Extraversion	14.83	3.33	16.70	3.28	4.67*	.07
Neuroticism	9.25	5.09	9.27	5.22	.00	.00
Psychoticism	9.54	3.76	11.19	4.81	2.01	.03
Big Five					1.15	.10
Extraversion	4.89	1.11	5.01	1.02	.20	.00
Neuroticism	3.03	1.18	3.22	1.16	.39	.00
Conscientiousness	4.70	.97	4.66	.98	.02	.00
Agreeableness	5.50	.93	5.13	.81	2.77	.05
Openness	4.65	.91	4.64	1.04	.00	.00

Table 4.3 *(continued)*

	Non-recidivists		Recidivists			
	M	SD	M	SD	F	η^2
Self-reported recidivism						
N	14		43			
PEN					3.45*	.16
Extraversion	16.29	2.46	16.02	3.51	.07	.00
Neuroticism	7.86	5.02	9.44	5.24	.99	.02
Psychoticism	7.64	2.24	11.72	4.48	10.64**	.16
Big Five					1.90	.16
Extraversion	5.38	.92	4.85	1.09	2.66	.05
Neuroticism	2.43	.88	3.32	1.20	6.54**	.11
Conscientiousness	4.85	1.09	4.59	.94	.72	.01
Agreeableness	5.67	.97	5.13	.82	4.14*	.07
Openness	4.65	1.15	4.60	.93	.03	.00

*p<.05, ** p<.01

Regarding self-reported recidivism, it appeared that the multivariate F of PEN was significant, indicating that PEN is able to distinguish recidivists from non-recidivists. The multivariate F of the Big Five model revealed no significant effect. Univariate analyses revealed that recidivists scored significantly higher on Neuroticism of the Big Five, but not on Neuroticism of the PEN-model. Moreover, recidivists scored significantly higher on Psychoticism, and lower on Agreeableness than non-recidivists.

Predicting Severity of Recidivism

To examine which of both models was better able to predict the severity of official and self-reported recidivism, multiple regression analyses were conducted. In Table 4.4 results of these analyses are presented separately for severity of official and self-reported recidivism. Neither the PEN or the Big Five model could significantly predict severity of official recidivism.

Self-reported recidivism could significantly be predicted from the PEN model, but not from the Big Five. Only Psychoticism was a strong predictor of severity of recidivism. The P-related dimensions of the Big Five, Agreeableness and Conscientiousness, were not significant related to severity.

Table 4.4
Multiple Regression Analyses Predicting Severity of Official and Self-reported Recidivism from the PEN and Big Five Model.

	Severity of official recidivism		Severity of self-reported recidivism	
	Beta	R^2	Beta	R^2
PEN		.10		.28**
Extraversion	.24		.03	
Neuroticism	-.07		-.10	
Psychoticism	.23		.57**	
Big Five		.04		.11
Extraversion	-.03		.00	
Neuroticism	.00		.21	
Conscientiousness	.11		.01	
Agreeableness	-.25		-.24	
Openness	.11		.03	

**p<.01

DISCUSSION

The aim of this study was to examine which of the two personality models, PEN or Big Five, differentiated best between offenders and college students, and between recidivists and non-recidivists. It was shown that both models were able to differentiate offenders from college students. The dimensions Extraversion (PEN), Agreeableness and Openness appeared to be lower in the offender sample. With regard to occurrence of recidivism, it appeared that only self-reported recidivism could be predicted by PEN. Analyses on single dimensions revealed that Extraversion (PEN) was higher in officially recorded recidivists compared to non-recidivists. The dimensions Psychoticism and Neuroticism (Big Five) were higher and Agreeableness was lower in self-reported recidivists. Concerning severity of recidivism it was shown that PEN was related to severity of self-reported recidivism. Psychoticism appeared to be the only significant predictor of severity of self-reported recidivism.

Both PEN and the Big Five model could discriminate offenders from college students. Univariate analyses showed differences in Extraversion of PEN, but not in Extraversion of the Big Five. This was an unexpected finding, because preliminary

analyses revealed a significant relation between both Extraversion dimensions. A further look at the items of both Extraversion scales showed that the Extraversion scale of the Big Five is actually a reversed introversion scale. This scale contains the adjectives talkative, introverted, quiet, reserved, withdrawn and bashful. PEN's Extraversion scale consists of items which resemble these introversion adjectives, but it also includes items considering traits like liveliness, sociability and sensation seeking. Probably it are those latter traits of PEN's Extraversion that are different for college students and offenders, since PEN's Extraversion did discriminate college students and offenders and the Big Five's Extraversion didn't. Then, according to Eysenck's hypothesis, we expected offenders to score higher on PEN's Extraversion than students. Surprisingly, the opposite appeared to be true; offenders were lower on Extraversion than students.

These low scores on Extraversion might be explained by the so-called incarceration effect. Eysenck (1987) pointed to the fact that incarcerated people cannot properly answer on the social activity questions which are part of the Extraversion scale. In order to examine whether this incarceration effect is relevant in our offender sample, we compared Extraversion scores of the detained offender sub sample with the released offender sub sample. A significant difference appeared; detained offenders were significantly lower on Extraversion of both PEN and Big Five than released offenders and college students. So we might conclude that the unexpected low scores of offenders on Extraversion are probably due to the effects of incarceration.

Findings of the comparison of PEN and Big Five in predicting the occurrence of recidivism showed little discriminating power of both models. Univariate analyses demonstrated differences between officially recorded recidivists and non-recidivists with regard to Extraversion of PEN, but again not with Extraversion of the Big Five. As stated above, comparison of both scales revealed that the Big Five's Extraversion actually represents reversed Introversion, while PEN's Extraversion also contains aspects regarding sensation seeking and social activity. Apparently, it are those latter aspects that are related to recidivism, and not the aspects concerning introversion. It is suggested that personality characteristics like sensation seeking and social activity, are related to the chance of getting caught by the police (Romero et al., 2001). People who are impulsive, sociable and adventurous, easily attract the attention of the police, and therefore are more at

risk to get caught. This seems to be a plausible explanation for our finding that PEN's Extraversion is only related to officially recorded recidivism, and not to self-reported recidivism.

Psychoticism was strongly related to the occurrence of self-reported recidivism. Blackburn (1993) and Gudjonsson (1997) stated that high Psychoticism scores characterise the more serious and persistent offenders. These statements are endorsed by our findings. Farrington, Birron, and Le Blanc (1982) have insisted that the relationship between Psychoticism and delinquency may be tautological, since the instruments for measuring Psychoticism contain items relating to antisocial behaviour. Heaven (1993) and Romero et al. (2001), however, eliminated P-items that were conceptually related to antisocial behaviour, and still found relations between Psychoticism and self-reported delinquent behaviour.

Neuroticism and Agreeableness of the Big Five were also related to occurrence of self-reported recidivism. As stated before, Agreeableness is assumed to be part of Psychoticism, so this finding is consistent with the finding that Psychoticism is involved in the occurrence of self-reported recidivism. Despite the relation between Neuroticism of the Big Five and recidivism, Neuroticism of PEN was not significantly related to occurrence of recidivism, though differences were in the expected direction.

That Neuroticism is related to recidivism is consistent with Eysenck's theory. High Neuroticism scores refer to emotional instability, which can lead to impulsive and antisocial behaviour. The combination of high Neuroticism with high Psychoticism is often found in offender samples (Blackburn, 1993; Gudjonsson, 1997). Our preliminary results on the correlations between PEN and Big Five revealed a significant relation between Neuroticism of the Big Five and Psychoticism in the offender sample.

Severity of officially recorded recidivism cannot be significantly predicted by one of the personality dimensions. While PEN's Extraversion was related to the occurrence of officially recorded recidivism, it appeared not to be significantly related to severity of officially recorded recidivism. As could be expected from the results on occurrence of self-reported recidivism, Psychoticism also appeared to be a strong predictor for severity of self-reported recidivism. While Neuroticism of the Big Five and Agreeableness were related to occurrence of self-reported recidivism, they were not related to severity.

It is remarkable that results regarding relations between personality dimensions and recidivism were different for officially recorded and self-reported recidivism. This raises questions about the comparability of both recidivism measures. We found some concordance between both measures, however not very strong. Explanations for the differences found concern the dark number (not caught by the police) of official records, and the reliability of the self-report answers. Most important however, is the finding that different sources of recidivism lead to different conclusions on which personality dimensions are relevant. When only officially recorded recidivism was measured, only PEN's Extraversion would emerge as being relevant. When only self-reported recidivism was used, PEN's Psychoticism and Big Five's Neuroticism and Agreeableness would emerge as being relevant. Our results show that it is important to use more sources of information. A conclusion that was also drawn by Farrington (1995) and Babinski et al. (2001).

This study shows that both models can differentiate between college students and offenders, and partially recidivists and non-recidivists. Eysenck (1998) pointed to the fact that offenders are not a homogeneous group and probably the same holds for recidivists. Several attempts have been made in searching for different personality profiles in offenders, in order to oblige to this heterogeneity of offenders (Daderman, 1999; McGurk & McDougall, 1981). In this study an attempt was made to search for relations between separate personality dimensions and recidivism. For future research it would be useful to search for personality profiles in released offender samples. Which personality profiles are more at risk for recidivism?

Furthermore, it appeared that personality dimensions explain little in variance of recidivism. In several studies on the development and continuation of delinquency, it was shown that environmental factors are also important in explaining delinquency (Farrington, 1995). For future research, it might be useful to search for interactions between personality and environmental factors. Perhaps it is personality profiles, in combination with some specific environmental factors after release that can explain why some persons re-offend and persist in their criminal behaviour, and others do not. Another useful approach is examining recidivism in a prospective study. The prediction of recidivism strictly requires control of the temporal order of variables, and examination of whether traits measured at a particular moment in time are associated with future recidivism.

Finally, this study was conducted in a particular juvenile detention centre for correctional treatment in the Netherlands. The small number of respondents in our study must be taken into account too. Results must therefore be interpreted with caution and further studies on larger samples and more institutions are necessary to draw more final conclusions.

Chapter 5

RELATIONS BETWEEN POST RELEASE ENVIRONMENTAL RISK AND PROTECTIVE FACTORS, PERSONALITY AND RECIDIVISM

Coleta van Dam, Jan M.A.M. Janssens and Eric E.J. De Bruyn

In the present study the influence of personality traits and post release environmental factors on juvenile criminal recidivism are examined. One year after their release from a juvenile detention centre, a sample of adolescent male offenders filled out a personality questionnaire and was interviewed on their living circumstances. Occurrence and severity of recidivism were measured by self-report and official criminal records. Cluster analyses revealed that highest recidivism rates were found in a type with a high amount of risk factors, a low amount of protective factors and high scores on Psychoticism. The least severe recidivists were characterized by low amounts of risk, high amounts of protective factors and low scores on Psychoticism and Neuroticism. Regression analyses reveals that occurrence of self-report recidivism is strongly predicted by Psychoticism and occurrence of officially recorded recidivism by Extraversion and the amount of risk factors. Severity of recidivism is predicted by the amount of risk factors. It is concluded that both environmental factors and personality traits are important in explaining juvenile recidivism after release from a detention centre.

INTRODUCTION

Studies on the explanation of juvenile delinquent behaviour from a psychological perspective can be divided into studies that relate personality traits (e.g. Eysenck, 1977) and studies that relate environmental risk factors to criminal behaviour (e.g. Farrington, 2003; Loeber et al., 2003). In both traditions, the study of juvenile criminal recidivism has received relatively little attention. Moreover, studies that explicitly examined predictors of juvenile recidivism (for reviews see Cottle, Lee, & Heilbrun, 2000; Loza, 2003) seldom considered risk factors in the post release situation or combined effects of personality traits and environmental risk factors. The need for studies on effects of personality traits and post release risk factors has been stressed by Heilbrun et al. (2000), Loza (2003), Piquero, Brame, Mazerolle, and Haapanen (2002) and Zamble and Quinsey (1997). The aim of this study is to contribute to this relatively new area of interest by studying combined effects of personality traits and post release environmental factors on juvenile criminal recidivism.

PERSONALITY, ENVIRONMENT AND CRIME

Personality and Crime

Within the area of studies that address the relation between personality traits and crime, Eysenck's theory has been one of the most influential. According to Eysenck (1977, 1998) the three basic PEN dimensions of personality (Psychoticism, Extraversion and Neuroticism) are related to physiological mechanisms in the brain and central nervous system (CNS). Through the working of the CNS and the related conditioning processes (see Eysenck & Gudjonsson, 1989), it could be convincingly theorized that delinquents should score high on the PEN dimensions. However full empirical support for Eysenck's high PEN delinquent profile has not been found. Studies are conclusive in their findings that high Psychoticism (P) is always involved in criminality, regardless of age, and both in offender as well as in normal samples. Mixed results though, have been found for Neuroticism (N) and Extraversion (E) (see Blackburn, 1993).

Only one study examined relations between the PEN dimensions and juvenile recidivism. Eysenck and Eysenck (1974) studied recidivism of boys, three years after release from a juvenile detention centre. Non-recidivists were significantly lower on E. No significant differences were found with regard to P and N.

Environmental Correlates of Crime

Several reviews presented an overview of risk and protective factors in childhood and adolescence that are related to, or predict offending in adolescence (e.g. Hawkins et al., 1998; Lipsey & Derzon, 1998). The Cambridge study of Farrington (2003) and the Pittsburgh Youth Study of Loeber (Loeber et al., 2003) are examples of long-term projects which revealed a comprehensive amount of risk and protective factors for the development of delinquency, but also for persistence in and desistance from criminality. Parental criminality, criminality of the partner, unemployment, financial problems, deviant peers and heavy drinking appeared to be related to persistence in criminal behaviour. Positive school performance, a supportive partner, employment and non-deviant friends appeared to be related to desistance from criminality (Farrington, 2003). Cottle et al. (2000) conducted a meta-analysis on 25 studies that examined predictors of juvenile criminal recidivism in offender populations. Factors related to offence history, such as age at first offence, age at first contact with law and number of prior commitments are strongly related to criminal recidivism. Also factors like family problems, conduct problems, substance abuse and delinquent peers were predictors of criminal recidivism. However, it is not known to what extent these factors are also relevant in the post release situation.

Although empirical studies focus on either personality traits or environmental factors, it has been acknowledged that both personality and environmental risk and protective factors are important in explaining criminality (Loeber et al., 2003). It has also been argued that it is more specifically the combination of personality traits and environmental factors that can explain why some people become delinquent, or persist in delinquency, and why others do not, or eventually desist from criminality (Piquero et al., 2002). For example Lynam, Caspi, Moffitt, Wikström, and Loeber (2000) found that impulsivity interacted with neighbourhood context on the development of offending. Impulsive boys in disadvantaged neighbourhoods were at greatest risk for juvenile offending. Huizinga, Weiher, Espiritu, and Esbensen (2003) found that drug use in combination with one or more risk factors increased the chance of serious delinquency extensively. O'Connor and Dvorak (2001) pointed to the fact that empirical attempts to test effects of combinations of personality traits and environmental factors are scarce in both offender as well as in normal samples.

Personality and Environment Configurations

Within the conceptual framework of Eysenck's theory, several attempts have been made to search for offender types with certain personality configurations. McGurk and McDougall (1981) and McEwan (1983) found different types of offenders by using cluster analysis on the personality scores of PEN. They both found clusters of delinquents scoring high on Psychoticism, Extraversion and Neuroticism, and several other clusters. Recently, Aleixo and Norris (2000) and Daderman (1999) identified different groups of offenders based on their PEN-scores. Eysenck, Rust, and Eysenck (1977) also searched for different types of offenders. Based on the nature of their criminal offence, they formed five types of offenders (e.g. murders, conmen, burglars etc.) and found that those five groups significantly differentiated in their PEN scores. However, in the studies that searched for personality types within offender samples, environmental factors were not considered. Also, relations between offender types and criminal recidivism were not studied.

Within the tradition of studies that examined environmental correlates of development and continuation of delinquent behaviour, also different offender types have been distinguished. These types were formed based on their offence trajectory (age of onset and ending of criminal behaviour, chronicity and severity of offending) and compared with regard to several environmental factors. For example Chung, Hill, Hawkins, Gilchrist, and Nagin (2002) distinguished five types: chronics, escalators, desisters, late onsetters and non-offenders. Chronics started in early childhood and persisted in offending through adulthood. Late onsetters started in adolescence with minor offences and continued their offending behaviour through adulthood at the same level of severity. Escalators started offending in adolescence and continued offending through adulthood, while the seriousness of their offences increased. Desisters started with relatively serious offences, but desisted from crime during adulthood. Environmental characteristics like substance abuse, aggressiveness, antisocial peers, school and neighbourhood factors were found to discriminate between the five types. These and related offender types and environmental predictors were identified in other studies as well (e.g. Ayers et al., 1999; Farrington, 2003; Loeber et al., 2003).

In two studies, attempts were made to find types of offenders simultaneously based on both environmental and personality factors. Huizinga, Esbensen, and Weiher (1991) studied different pathways of delinquency using data from the

Denver Youth Survey. To detect offender types cluster analyses were used on measures of positive conventional home, parental attitudes to child deviance, youth attitudes/beliefs, youth impulsive/hyperactive and delinquent/conventional behaviour of peers. Non-delinquent children having a personal environment that includes delinquent friends, appeared to be at risk for involvement in delinquent behaviour. Also non-delinquent children with a high level of impulsive/hyperactive behaviour were more at risk for initiation of delinquent behaviour. High-level delinquent children in a prosocial positive home environment appeared to decrease their delinquent behaviour.

Jones and Harris (1999) noticed that although it has been recognized that treatment programs can have important differential outcomes for different persons, traditionally most treatment programs do not differentiate between participants. Therefore, the purpose of their study was to find types of juvenile delinquents, that can be used in facilities to understand treatment outcomes and evaluate program effectiveness. Based on four scales, consisting of 14 subscales of self-esteem, values, school bonding and family bonding, five clusters were found in a sample of 5803 juveniles. These clusters were called autonomy seeking, neurotic anxious, alienated deprived, passive conformist and detached defended. There appeared to be an interaction effect of delinquent type and program type on re-offending. Alienated deprived delinquents were more likely to re-offend after aftercare programs, and the least likely to re-offend after an institutional program.

SCOPE AND RESEARCH STRATEGY

In the present study we searched for explanations why some people persist in criminal offending after release from a juvenile detention centre and others do not. We joined the recent approach of simultaneously studying multiple factors both inside and outside the person's personality by focusing on a set of factors instead of exploring the effect of any of these factors separately. The present study extends the studies by Huizinga et al. (1991) and Jones and Harris (1999). First, the personality variables (Psychoticism, Extraversion, Neuroticism) we studied did not have an ad hoc status as had the personality variables in the studies of Huizinga et al. and Jones and Harris, but form an integrated part of Eysenckian theory which explicitly links personality and delinquency. More specifically, we focused on the personality traits P, E and N. Second, the present study did not

focus on past environment features but captured risk and protective features of the post release environment to which the delinquent has to re-adapt. In fact, risk and protective factors for desistance and persistence after release from a correctional institution have not yet been studied. The factors we studied resulted from a literature search (van Dam, Janssens, & De Bruyn, 2003) and included features such as (lack off) social support and job satisfaction (see Appendix 1, Table 3.1 and Method section).

We sought to answer the following research questions. First, which constellation of factors could predict the occurrence and severity of recidivism: a typology based on personality factors, a typology based on environmental factors, or a typology based on a combination of personality and environmental factors? Second, what is the relative impact of personality dimensions and the post release environmental risk and protective factors? In answering these questions we tackled four methodological issues we had been confronted with in the literature: The assessment of risk and protective factors, the assessment of delinquent behaviour (self-report versus official records), the parameters used to assess recidivism (occurrence versus severity), and type of data analyses (cluster analysis versus analysis of variance and regression analysis).

The Assessment of Risk and Protective Factors

In the literature on risk and protective factors, there is discussion on the issue whether risk and protective factors are conceptually different or not (e.g. Deković, 1999; Jessor, Van Den Bos, Vanderryn, Costa, & Turbin, 1995; Rutter, Giller, & Hagell, 1998). Stouthamer-Loeber, Loeber, Wei, Farrington, and Wikström (2002) stated that risk and protective factors can be opposite ends of one continuum. Extreme poles of the same variable can have different effects on different people. A negative score on a variable can have a risk effect for one person, and a positive score on the same variable can have a protective effect for another. Therefore, Stouthamer-Loeber et al. proposed a trichotomisation of a variable distribution. The lowest 25% scores are supposed to have a risk effect, the highest 25% scores a protective effect, and the 50% scores in between are considered to be neutral. We followed this approach, but some factors could not be trichotomised, because there was no neutral middle. For example, financial problems are present or not; there is no positive opposite end of financial problems. Consequently, some factors

can only be dichotomised and are either risk or protective. We labelled factors as either risk or protective, based on the results of our literature search. A variable is considered to be a risk factor if in the literature it is emphasized that the likelihood of recidivism increases when the factor is present. For example, the presence of deviant friends increases the risk for recidivism; therefore it is considered to be a risk factor. The absence of this potential risk does not imply protection, but rather a neutral or no effect. A variable is protective when the likelihood of non-recidivism is heightened when the factor is present. For example, the presence of a significant other protects against recidivism. Again, absence does not imply risk.

The Use of Self-Reported and Officially Recorded Crimes

The second issue concerns the advantages and disadvantages of self-reported delinquent behaviour and official records (see Babinski, Hartsough, & Lambert, 2001). The most important limitation of self-reported delinquent behaviour is the possibility of social desirable answers. Because of the (expected) unwillingness of respondents to report on severe offences, self-report lists often address the less serious forms of crime. The most important limitation of official records is that they do not report on undetected crime, the issue of dark number. So, in this study both self-reported offences and official criminal records were used to measure recidivism.

The Operationalisation of Recidivism

The third issue concerns the operationalisation of recidivism. In studies on recidivism, often a dichotomy between recidivists and non-recidivists is applied. Those who committed one or more offences after release are considered to be re-offenders, and those who did not commit any offence after their release are regarded as desisters or non-recidivists. This dichotomy implies that recidivists can be looked upon as a homogenous group. However, it is questionable whether this is a proper assumption. For example, a person who re-offends by stealing a bike and a person who re-offends by committing an armed robbery are both recidivists, but the severity of the committed offences varies considerably. Therefore, in the present study both parameters of recidivism, occurrence and severity, were used.

Personality and Environment Interaction

Finally, to study combined or interaction effects of personality traits and environmental factors, regression analyses with interaction terms or two-way ANOVA's seem to be the most appropriate methods. However, these methods are only suitable when a limited amount of variables is being examined. When many variables are included, studying interaction effects by means of regression analysis or ANOVA would lead to a huge amount of tests. In this study we included 16 risk and 11 protective environmental post release factors we identified by an extensive literature search (van Dam, Janssens, & De Bruyn, 2003). The factors refer to characteristics of various domains such as child characteristics, family, school/ work, peers and financial situation.

A method that can be used when so many variables are involved, is cluster analysis, as applied by Huizinga et al. (1991) and Jones and Harris (1999). Based on this consideration we first applied cluster analysis on the three personality dimensions (PEN) to find personality types. After that we carried out ANOVA to test differences in occurrence and severity of recidivism between the types found. We followed the same strategy with regard to the 27 environmental factors. First, cluster analysis was applied, and after that we tested differences in the aspects of recidivism between the adolescent types found. At last we examined whether a typology based on a combination of environmental and personality factors could explain recidivism and whether such a typology could give a more detailed insight in the influence of these factors. Because the number of environmental variables (27 risk and protective factors) outweigh the number of personality variables (three dimensions), a cluster analysis on the initial set of variables would favour the impact of the environmental factors. To guarantee a more balanced analytical design, the 27 environmental factors were reduced to two aggregate measures, respectively the amount of risk factors and the amount of protective factors adolescents have experienced after their release. At last, we analysed the relative weight of personality and environmental factors to the prediction of occurrence and severity of recidivism with regression analysis.

METHOD

Sample

The sample consisted of 111 male adolescents who were released from "De Hunnerberg", a juvenile correctional institution in Nijmegen, the Netherlands. "De Hunnerberg" consists of two centres, a treatment centre and a detention centre. Boys are sent to the detention centre to serve out short sentences. Juveniles are sent to the treatment centre if they committed their crime due to a developmental disorder. They stay there for approximately two years. In total 16 (31%) of the 52 released boys from the detention centre, and 45 (76%) of the 59 released boys from the treatment centre, consented to take part in this study. The other boys could not participate because of various reasons (e.g. not traceable, refused, mentally retarded). There were no significant differences between the respondents and the non-responders with regard to ethnicity, age at the end of detention and mean length of stay.

One of the 61 respondents was excluded because data were incomplete, resulting in a final sample of 60[4]. Of these, 53% had Western-European, 20% Northern-African, 8% Surinamese, 3% came from the Netherlands Antilles, 5% from Turkey and 10% had diverse origins (e.g. African, South-American). The mean age of the participants was 19.32 years (sd = 2.19) and the mean length of stay in the institution was 21.89 months (sd=14.27).

We found significant differences between the treatment group and the detention group with regard to age ($F=38.02$, $p<.001$) and length of stay ($F=64.39$, $p<.001$). The detention boys are younger ($M=16.96$ years) than the treatment boys ($M= 20.11$ years) and stayed on average 4 months in detention, compared to a mean of 28 months of the treatment boys. This difference in length of stay was expected because of the different aims of the two centres. The differences in age between the treatment and the detention group can be clarified by the fact that treatment boys stay longer in captivity than detention boys and therefore they are older at the time of measurement.

[4] Four respondents did not fill out the self-report questionnaire on delinquent behaviour. Since we disposed of official criminal records of these respondents, they were not removed from the analyses. Therefore results regarding self-reported recidivism reports on 56 instead of 60 respondents.

Measures

PEN-model

The Eysenck Personality Questionnaire Revised (EPQ-R; Eysenck, Eysenck, & Barrett, 1985) was used to assess the PEN dimensions. The EPQ-R consists of 100 yes/no items, of which 32 items represent the Psychoticism, 24 items the Neuroticism and 23 items the Extraversion dimension.

The remainder 21 items form the Lie scale. The items of the Lie scale were excluded from the analyses in this study. Measures of Psychoticism, Extraversion and Neuroticism were obtained by computing sum scores over the items of each scale. Cronbach's alpha's in the present study were .73 for Psychoticism; .65 for Extraversion and .84 for Neuroticism.

Environmental Risk and Protective Factors.

The Follow-up Interview for Living circumstances (FIL; van Dam, Janssens, & De Bruyn, 2000) was used to measure environmental risk and protective factors. The FIL is a semi-structured interview, that consists of 88 questions. The questions were constructed based on the outcome of a literature search (van Dam, Janssens, & De Bruyn, 2003). Scores for risk and protective factors were based on the outcome of the interview. All risk and protective variables were dichotomised: respondents received a score of 0 when the risk or protective factor was absent, and a score of 1 when the risk or protective factor was present.

In Table 3.1 (see appendix 1) the operationalisation of all risk and protective variables, examples of items and the definitions of the presence of risk and protection are described[5]. As can be seen from Table 3.1 the number of items used to measure the several variables, varies considerably. For the sociological and behavioural oriented variables, a restricted number of questions was sufficient to obtain a measure for that specific risk or protective factor (e.g. drug and alcohol use, outgoing behaviour, future perspectives, non-deviant best friend). For instance, the risk factor outgoing behaviour was measured by the question "How many evenings per week do you go to a pub?"

Respondents were asked to answer this question on a 7-point scale (1= never, 2= a few times a year, 3= a few times a month, 4= once a week, 5= only weekends,

[5] Strictly speaking, the child characteristics we listed are not environmental factors. The reason why we treated them as environmental factors is that they are strongly linked up with the social habitat of our subjects.

6= a few evenings a week, 7= every evening). Respondents who answered this question with a score of 6 or higher received a score 1 on the risk factor outgoing behaviour. Respondents with scores up to 5, received a score 0 on this risk factor.

For variables that referred to more psychologically oriented constructs, more items were needed to assess the underlying construct (e.g. parental support, criminal attitude, job satisfaction). For example, the variable 'criminal attitude' was measured by a scale consisting of 19 items. An example of an item of this scale is "What do you think of someone who has broken into a house?". All items had to be answered on a four-point scale (1= not bad at all, 2=not so bad, 3= bad, 4= very bad). Cronbach's alpha of this scale in the present study was .85. For each respondent a mean score on this scale was computed. This procedure was applied to each type of the construct scales. In order to obtain scores on these risk and protection factors, the lowest 25% scores of the total range were considered as risk scores, the highest 25% scores as protection. Respondents who had a mean score that belonged to the lowest 25% scores received a score 1 on that particular risk factor. Respondents with a mean score that belonged to the highest 25% scores, received a score 1 on that particular protective factor. Respondents with a mean score that belonged to the 50% middle scores received score 0 on both the risk and protective factor.

Two variables were assessed by an open question (moving to another neighbourhood and aftercare). Answers were categorized afterwards. For example the variable 'moving to another neighbourhood' was measured by the open question "Where did you went to after your release and why?" Answers were coded in three categories: went to old neighbourhood, went to a new neighbourhood because friends live there, went to a new neighbourhood because of the availability of work and housing, or because of the wish to start a new life. To obtain a measure for protection, respondents with answers of the third category received a score 1 on the protective factor moving to another neighbourhood. Respondents with answers of the first and second category received score 0 on this protective factor.

Finally the scores on the separate risk and protective factors were aggregated to a risk factor index and a protective factor index. The risk factor index (RFI) was computed by adding the dichotomised scores on the 16 risk factors (range 0-16).

The protective factor index (PFI) was computed by adding the dichotomised scores on the 11 protective factors (range 0-11).

For reasons of convenience risk and protective factors were ordered in domains. The risk factors were ordered in the domains: child characteristics, family risk, school/work risk, peers risk and economic deprivation. The domain child characteristics consists of the variables positive criminal attitude, drugs abuse, alcohol abuse and outgoing behaviour. The family risk domain includes the variables poor parental support, poor parental supervision and family criminality. The school/ work risk domain is formed by the variables poor school performance, unemployment, poor job satisfaction and lack of future perspectives. The peers risk domain contains the variables deviant peers, criminality of partner and poor support partner. The economic deprivation domain consists of the variables low income and debts. The protective factors were ordered in the domains: child characteristics protection, family protection, school/work protection, peers protection and social network protection. The child characteristics domain is composed by the variables negative criminal attitude and moving to another neighbourhood. The family protection domain contains the variables parental support and parental supervision. The school/ work protection domain includes the variables school performance, job satisfaction and realistic future perspectives. The peers protection domain consists of the variables support partner and non-deviant best friend. And finally the social network domain is formed by the variables availability of a significant other and aftercare.

Self-Reported Recidivism

Self-reported recidivism was measured by the Self-Report list for Delinquent Behaviour (SRDB; Boendermaker, 1998). The SRDB consisted of 20 items each representing a criminal act. For each act, respondents were asked whether they committed this act since their release from the juvenile institution. The criminal offences varied from vandalism and burglary, to rape and dealing in drugs. Respondents were considered as recidivists if they had committed one or more of the 20 acts mentioned in the SRDB.

To assess severity of recidivism, the following procedure was carried out. Every act was rated on a three-point scale, according to the level of severity which depended on the maximum sentence according to the Dutch penal code. Score one

was assigned to non-violent offences with a maximum sentence of 36 months, (7 offences, e.g. vandalism, shoplifting, bicycle theft), score two to offences with a minimum sentence of 37 months and a maximum of 71 months (7 offences, e.g. threatening, car theft, drugs traffic), and score three to offences with a maximum sentence of 72 months or higher (6 offences, e.g. burglary, rape, armed robbery). For each respondent, a sum score was computed over these 20 acts, with a possible range of 0-39.

Since non-recidivists receive a score of 0 for severity of recidivism, in the analyses two measures of severity are presented. A mean score of severity for the total sample (recidivists and non-recidivists) and a mean score of severity if only recidivists are taken into account.

Officially Recorded Recidivism

Official criminal records were used to obtain a measure for officially recorded recidivism. Criminal records were requested from the Criminal Justice Department of the Ministry of Justice. These files contain all committed offences that were sent to court. For all released offenders criminal record files were obtained with a minimum follow-up period of 7 months, and a maximum follow-up period of 52 months (mean 29 months). Each criminal offence recorded in this file after the date of release from the detention centre was regarded as recidivism. To determine a measure of severity of recidivism, for each offence the maximum sentence according to the Dutch penal code was registered. A mean score of severity of recidivism was obtained by summing the maximum sentences of all re-offences and dividing this score by the total number of offences after release. Since non-recidivists received a score of 0 for severity of recidivism, in the analyses two measures of severity are presented. A mean score of severity for the total sample (recidivists and non-recidivists) and a mean score of severity if only recidivists are taken into account.

Procedure

We adjusted the length of the follow-up period to the differences in length of stay of boys in the treatment and in the detention centre. Approximately one year after their release from the treatment centre and six months after release from the detention centre, boys were approached by a familiar staff member of

"De Hunnerberg". Seven staff members conducted the interviews. These staff members are no professional interviewers but their daily job is to prepare the boys for re-entry into the community after release. Therefore they are used to hold conversations with boys and their parents. We chose to use familiar staff members as interviewers because we suspected that this personal bond would heighten the trustworthiness of the information as the boys would be more unreserved and trustful to them. Furthermore, because the interviewers knew the boys and their histories, they were more aware of possible social desirable answers and were able to see through if someone tried to keep up appearances.

Before the actual visit by the interviewer, the personality questionnaire (EPQ-R) and instructions were sent by post. During the visit, the FIL was carried out by the interviewer. When the interview had been finished, respondents were asked to fill out the Self-Report list for Delinquent Behaviour (SRDB). Finally the interviewer collected the completed personality questionnaires and gave the boy a compensation of 23 euro. Interviewers were instructed by the first author and every first interview was accompanied by her.

RESULTS

Descriptive Data

Correlations among the Risk and Protection Factor Indices, the PEN-dimensions and measures of occurrence and severity are presented in Table 5.1. We found a high negative correlation between both indices; the higher the amount of risk factors, the lower the amount of protective factors. Furthermore, both indices were related to P. The higher the Risk Index, and the lower the Protection Index, the higher P was. P and E were related to recidivism, the higher the adolescents' score on P, the more severe their self-reported recidivism after release was, and the higher adolescents' scores on E, the more officially recorded recidivism they showed after release.

Table 5.1

Correlations Between Risk and Protective Factor Indexes, Personality (PEN) and Measures of Recidivism.

	RFI	PFI	P	E	N	SR O	SR st	SR sr	OR O
Risk and protective factors									
Risk factors index	_								
Protective factors index	-.47**	_							
PEN dimensions									
Psychoticism	.44**	-.41**	_						
Extraversion	-.09	-.11	-.09	_					
Neuroticism	.19	-.05	.40**	-.16	_				
Self-report recidivism									
Occurrence	.31*	-.25	.40**	-.06	.13				
Severity (total sample)	.70**	-.48**	.52**	-.02	.14	.50**			
Severity (recidivists)	.72**	-.51**	.42**	.01	.09	_			
Official criminal records									
Occurrence	.35**	-.21	.18	.26*	.00	.21	.30*	.27	
Severity (total sample)	.36**	-.22	.18	.16	-.03	.29*	.44**	.36*	.68**
Severity (recidivists)	.21	-.14	.09	-.03	-.05	.30	.36*	.26	_

Note: SR O = Self-reported recidivism occurrence, SR st = Self-reported recidivism severity of the total sample, SR sr = Self-reported recidivism severity of the recidivists sample, OR O = Officially recorded recidivism occurrence.

* p < .05; **p < .01

Occurrence of self-reported recidivism was not related to occurrence of officially recorded recidivism. With regard to severity we found a positive correlation between both measures of recidivism.

Typologies and Recidivism

The cluster analytical method was used to examine which constellation of factors could predict the occurrence and severity of recidivism: a typology based on personality factors, a typology based on environmental factors, or a typology based on a combination of personality and environmental factors? Therefore three cluster analyses were performed, one with regard to the PEN personality dimensions, one with regard to risk and protective factors and one with regard to a combination of risk and protective factors and the PEN personality dimensions. The scores of the respondents on the PEN dimensions and the risk and protective factors were standardized within the total sample. All cluster analyses were performed using Ward's method and Squared Euclidean Distance. In each cluster analysis, solutions with four clusters could be most adequately interpreted with regard to the prediction of recidivism.

PEN-Based Types and Recidivism

Table 5.2 presents the mean scores of the four personality types identified based on a cluster analysis of the EPQ-R scores.

Table 5.2
Mean Scores on Psychoticism, Extraversion and Neuroticism of the EPQ-R of the Four PEN-Personality Types.

	Type 1 N=19	Type 2 N=16	Type 3 N=14	Type 4 N=11	Total mean	F
Psychoticism	6.84^{a}	9.88^{ab}	12.71^{bc}	15.00^{c}	10.52	16.02**
Extraversion	18.10^{b}	12.81^{a}	18.00^{b}	13.73^{a}	15.87	22.43**
Neuroticism	6.74^{a}	5.75^{a}	10.50^{b}	17.09^{c}	9.25	33.74**
Description of types	P-E+N-	P±E-N-	P+E+N±	P+E±N+		

Note: - below average, ± average + above average. Means with different superscripts are significantly different.

** p<.01

Two types with high P (type 3 & 4) were identified, one in combination with high E (type 3) and one in combination with high N (type 4). Type 1 is characterized by high E, low N and P, type 2 by low E and N and moderate P.

In Table 5.3 the occurrence (percentage) and severity (mean scores) of the four types on self-reported and officially recorded recidivism are presented. No differences were found between the PEN personality types with regard to severity and occurrence of both self-reported and officially recorded recidivism.

Table 5.3
Percentages and Mean Scores of Occurrence and Severity on Self-reported and Officially Recorded Recidivism of the Four PEN-Personality Types.

Recidivism	Type 1 N=19	Type 2 N=16	Type 3 N=14	Type 4 N=11	Total %/mean	F	χ^2
Self-report							
% recidivists	59	73	86	90	75		4.45
Severity (total sample)	2.41	4.13	6.86	5.80	4.59	2.08	
Severity (only recidivists)	4.10	5.64	8.00	6.44	6.12	.99	
Official criminal records							
% recidivists	68	44	64	64	60		2.49
Severity (total sample)	25.00	21.77	33.76	23.04	25.82	.41	
Severity (only recidivists)	36.54	49.75	52.52	36.20	43.04	.74	

Risk-Protection Based Types and Recidivism

By applying cluster analysis we found four risk-protection based types. In Table 5.4 mean scores of these four types are presented. We also added the mean scores on the Risk and Protection Factor Indices. Adolescents of type 2 had the least number of risk factors and the highest number of protective factors (compare also the RFI and PFI means). Adolescents of type 3 had the highest number of risk factors, especially in the domain of child characteristics, and a low number of protective factors. Adolescents of both types 1 and 4 had a moderate number of risk factors, spread over the domains, and a moderate to low number of protective factors.

Table 5.4
Mean Scores on the Risk and Protective Factors of the Four Risk-Protection Types.

	Type 1 N=23	Type 2 N=21	Type 3 N=12	Type 4 N=4	Total mean	F
Risk factors						
Child characteristics						
Positive criminal attitude	.09[a]	.10[a]	.75[b]	.25[ab]	.23	11.53**
Drugs abuse	.48[b]	.00[a]	.42[b]	.25[ab]	.28	5.51**
Alcohol abuse	.13[a]	.05[a]	.92[b]	.50[ab]	.28	22.85**
Outgoing behaviour	.09[ab]	.00[a]	.58[c]	.50[bc]	.18	10.53**
Family factors						
Poor parental support	.48[b]	.05[a]	.25[ab]	.50[ab]	.28	4.21**
Poor parental supervision	.17	.00	.00	.00	.07	2.42†
Family criminality	.52[b]	.14[a]	.75[c]	.00[ab]	.40	6.79**
School/work						
Poor school performance	.00	.00	.00	1.00	.07	--
Unemployment	.35	.10	.17	.00	.20	1.95
Poor job satisfaction	.09	.10	.25	.50	.15	2.07
Lack of future perspectives	.17	.00	.25	.00	.12	2.11
Peers						
Deviant peers	.70[b]	.19[a]	.67[b]	1.00[b]	.53	7.21**
Criminality of the partner	.09[ab]	.00[a]	.33[b]	.00[ab]	.10	3.77*
Poor support partner	.13	.10	.25	.25	.15	.58
Economic deprivation						
Low income	.30	.48	.08	.00	.30	2.67†
Debts	.39[ab]	.19[a]	.75[b]	.25[ab]	.38	3.93*
RFI[1]	4.22[b]	1.48[a]	6.42[c]	5.00[bc]	3.75	24.23**
Protective factors						
Child characteristics						
Negative criminal attitude	.17[a]	.52[b]	.00[a]	.00[ab]	.25	5.92**
Moving to a.o. neighbourhood	.09	.29	.00	.25	.15	2.14
Family factors						
Parental support	.13	.29	.33	.00	.22	1.22
Parental supervision	.13	.14	.17	.00	.13	0.24
School/work						
School performance	.00a	.24b	.00ab	.00ab	.08	3.79*
Job satisfaction	.17	.14	.08	.00	.13	0.39
Realistic future perspectives	.09	.29	.17	.00	.17	1.33

Table 5.4 *(continued)*

	Type 1 N=23	Type 2 N=21	Type 3 N=12	Type 4 N=4	Total mean	F
Peers						
Support partner	.13	.14	.08	.00	.12	0.27
Non-deviant best friend	.09ab	.33b	.00a	.00ab	.15	3.33*
Social network		.				
Availability of sign. other	.78b	.24a	.33a	.75ab	.50	6.47**
Aftercare	.39	.29	.17	.00	.28	1.23
PFI[1]	2.17[ab]	2.90[b]	1.33[a]	1.00[a]	2.18	5.24**

1) RFI and PFI were not included in the cluster analysis. Note: RFI = Risk Factor Index, PFI = Protective Factor Index. Means with different superscripts are significantly different.
† p<.10, *p<.05, **p<.01

In Table 5.5 the occurrence (percentage) and severity (mean scores) of the four types on self-reported and officially reported recidivism are presented. We found the following relationships between type and recidivism. Adolescents of type 2 (low risk, high protection) were lowest on occurrence and severity of both self-reported and officially recorded recidivism; adolescents of type 3 (high risk, low protection) were highest in all measures of recidivism. The severity of recidivism of both types 1 and 4 (average risk, low protection) was on average.

Table 5.5
Percentages and Mean Scores of Occurrence and Severity on Self-reported and Officially Recorded Recidivism of the Four Risk-Protection Types.

Recidivism	Type 1 N=23	Type 2 N=21	Type 3 N=12	Type 4 N=4	Total %/mean	F	χ^2
Self-report							
% recidivists	73	60	100	100	75		7.13†
Severity (total sample)	4.23[a]	1.15[a]	11.60[b]	6.25[ab]	4.59	15.14**	
Severity (only recidivists)	5.81[a]	1.92[a]	11.60[b]	6.25[ab]	6.12	9.51**	
Official criminal records							
% recidivists	57	38	100	75	60		12.69**
Severity (total sample)	18.20[a]	16.95[a]	55.65[b]	26.75[ab]	25.82	5.80**	
Severity (only recidivists)	32.19	44.50	55.65	35.67	43.04	1.41	

Note: Means with different superscripts are significantly different. † p<.10, **p<.01

PEN + Risk-Protection Based Types and Recidivism

To find out whether a combination of personality and environmental factors would lead to specific explanation of variances in recidivism, cluster analysis was applied based on the PEN-dimensions and the amounts of risk and protective factors (Risk Factor Index (RFI), Protective Factor Index (PFI)). By applying cluster analysis on these five variables we found four types each characterized by its own constellation of environmental and personality factors. Table 5.6 presents the mean scores of these four types.

Table 5.6
Mean Scores on the Risk and Protective Factor Indexes and Personality (PEN) of the Four Risk-Protection + PEN – Types.

	Type 1 N=22	Type 2 N=9	Type 3 N=20	Type 4 N=9	Total mean	F
RFI	3.00[b]	1.22[a]	3.75[b]	8.11[c]	3.75	36.82**
PFI	1.91[b]	4.22[c]	2.20[b]	.78[a]	2.18	18.26**
Psychoticism	7.09[a]	7.44[a]	14.25[b]	13.67[b]	10.52	27.44**
Extraversion	17.05	14.56	15.70	14.67	15.87	1.86
Neuroticism	6.45[a]	6.89[a]	13.30[b]	9.44 [ab]	9.25	10.03**

Note: Means with different superscripts are significantly different
** $p < .01$

Type 4 consists of adolescents who experienced a lot of risk after release, were lowest in the amount of protective factors, scored high on P and average on N ('P+N± high risk-low protection type'). Type 3 adolescents had high scores on both P and N. They differed from type 4 in that they experienced less risk and more protection after release ('the P+N+ average risk-protection type'). Adolescents of type 1 and 2 clearly had lower scores on P and N than types 3 and 4. The difference between type 1 and 2 was that adolescents of type 2 ('P-N- low risk-high protection type') experienced less risk and more protection after release than adolescents of type 1 ('P-N- average risk-protection type'). So, both types 1 and 3 experienced average amounts of risk and protective factors, but differed with regard to personality. Type 1 was characterized by low P and N, type 3 by high P and N.

In Table 5.7 the occurrence (percentage) and severity (mean scores) of the four types on self-reported and officially recorded recidivism are presented.

Table 5.7
Percentages and Mean Scores of Occurrence and Severity on Self-reported and Officially Recorded Recidivism of the Four Risk-Protection + PEN – Types.

Recidivism	Type 1 N=22	Type 2 N=9	Type 3 N=20	Type 4 N=9	Total mean	F	χ^2
Self-report							
% recidivists	60	63	90	89	75		6.12
Severity (total sample)	2.25 [a]	1.00 [a]	5.37 [a]	11.33 [b]	4.59	11.46**	
Severity (only recidivists)	3.75[a]	1.60 [a]	6.00 [a]	12.75 [b]	6.12	9.76**	
Official criminal records							
% recidivists	64	44	55	78	60		2.42
Severity (total sample)	25.68	18.57	23.62	38.30	25.82	.66	
Severity (only recidivists)	40.36	41.79	42.95	49.25	43.04	.13	

Note: Means with different superscripts are significantly different
** $p < .01$

It appeared that adolescents of type 4 committed more severe self-reported crimes after release than adolescents of the other three types. Offenders of type 4 were high on risk and P, and low on protection. The least severe recidivism was found in type 2 consisting of adolescents low on risk, P and N, and high on protection. The two types with average amounts of risk and protection factors and different levels of P and N, also differed with regard to severity of self-reported recidivism. The high P and N type (type 3) was higher on severity of recidivism than the low P and N type (type 1). However, it must be noted that post-hoc analyses did not reveal significant differences between type 1, 2 and 3 with regard to severity of self-reported recidivism.

Relative Impact of Personality and Environmental Factors

To evaluate the relative impact of our personality factors and risk and protective factors we carried out hierarchical multiple regression analyses with occurrence and severity of recidivism as dependent, and PEN-dimensions and the amount of risk and protective factors as independent variables. In Table 5.8 results of the hierarchical multiple regression analyses for occurrence of self-reported and officially recorded recidivism are presented.

Table 5.8
Hierarchical Multiple Regression Analyses Predicting Occurrence of Self-Reported and Officially Recorded Recidivism from the PEN-dimensions and the Environmental Factors.

	Self-reported recidivism				Officially recorded recidivism			
Step/Predictor	Beta[a]	Beta[b]	R^2	R^2 Change	Beta[a]	Beta[b]	R^2	R^2 Change
1. PEN dimensions			.16*				.11†	
Psychoticism	.42**	.33*			.22	.07		
Extraversion	-.02	-.01			.27*	.29*		
Neuroticism	.04	-.03			-.05	-.05		
2. Environmental factors			.18†	.02			.21*	.10*
RFI		.13				.36*		
PFI		-.06				.01		

[a] Standardized beta coefficients at initial step; [b] Standardized beta coefficients at final step
† p<.10, *p<.05,**p<.01

The entry of the PEN-dimensions significantly explained the variance in occurrence of self-reported recidivism; the variance in officially recorded recidivism was nearly significant. P appeared to be a significant predictor for occurrence of self-reported recidivism and E for officially recorded recidivism. Entrance of the environmental factors increased the explained variance significantly in officially recorded recidivism. The RFI appeared to be a significant predictor for occurrence of officially recorded recidivism, but not for occurrence of self-reported recidivism. Although P and the risk factor index are highly interrelated (see Table 5.1), only P appeared to be a strong predictor for occurrence of self-reported recidivism. Furthermore both E and the RFI showed to be predictors for occurrence of officially recorded recidivism.

In Table 5.9 results of the hierarchical multiple regression analyses for severity of self-reported recidivism in the total and recidivists sample are presented. The entrance of the PEN-dimensions explained a significant amount of the variance in severity of recidivism of both samples. P appeared to be the strongest predictor of severity of recidivism. Entrance of the environmental factors added a significant increment in the percentage of explained variance. The risk factor index appeared to be the strongest predictor of severity in both the total sample and the recidivists

sample. Since P and the RFI are highly interrelated (see Table 5.1), the beta of P decreased substantially when the environmental factors were entered. However, P continued to be a significant predictor for severity in the total sample. In the recidivists sample P appeared to be only a strong predictor when the environmental factors were not taken into account.

Table 5.9
Hierarchical Multiple Regression Analyses Predicting Severity of Self-reported Recidivism from the PEN-dimensions and the Environmental Factors.

	All respondents (N=56)				Only recidivists (N=42)			
Step/Predictor	Beta[a]	Beta[b]	R^2	R^2 Change	Beta[a]	Beta[b]	R^2	R^2 Change
1. PEN dimensions			.28**				.19*	
Psychoticism	.57***	.26*			.45**	.17		
Extraversion	.03	.06			.04	.10		
Neuroticism	-.10	-.07			-.07	-.06		
2. Environmental factors			.56***	.28***			.58***	.39***
RFI		.53***				.62***		
PFI		-.13				-.12		

[a] Standardized beta coefficients at initial step; [b] Standardized beta coefficients at final step
† p<.10, *p<.05, **p<.01, ***p<.001

For severity of officially recorded recidivism, the same set of hierarchical multiple regression analyses for total and the recidivists sample was conducted. Results are presented in Table 5.10. The entry of the PEN-dimensions did not explain a significant percentage in the variance of recidivism. Addition of the environmental factors significantly increased the amount of explained variance in the total sample. The risk factor index appeared to be a significant predictor for severity of officially recorded recidivism in the total sample, but not in the recidivists sample. Personality dimensions were not related to severity of officially recorded recidivism.

Table 5.10

Hierarchical Multiple Regression Analyses Predicting Severity of Officially Recorded Recidivism from the PEN-dimensions and the Environmental Factors.

	All respondents (N=60)				Only recidivists (N=36)			
Step/Predictor	Beta[a]	Beta[b]	R^2	R^2 Change	Beta[a]	Beta[b]	R^2	R^2 Change
1. PEN dimensions			.07				.02	
Psychoticism	.23	.07			.14	.06		
Extraversion	.16	.18			-.03	-.02		
Neuroticism	-.09	-.09			-.11	-.12		
2. Environmental factors			.18†	.11*			.06	.04
RFI		.37*				.20		
PFI		.00				-.03		

[a] Standardized beta coefficients at initial step; [b] Standardized beta coefficients at final step

† p<.10, *p<.05

DISCUSSION

In this study we examined the influence of personality and post release environmental factors on juvenile criminal recidivism. It was shown that a typology based on personality factors could not explain variances in several measures of recidivism. A typology based on environmental factors could explain variances in recidivism. Highest recidivism rates were found in the type with a high amount of risk factors and a low amount of protective factors. Lowest recidivism rates were found in the type with a low amount of risk factors and a high amount of protective factors. In the combined environmental-personality typology the 'high risk-low protection-high P' type emerged and appeared to be the most severe recidivist.

Regression analyses were conducted to test the relative weight of personality and environmental factors to the prediction of occurrence and severity of recidivism. Occurrence of self-reported recidivism was predicted by P and occurrence of officially recorded recidivism by the amount of risk factors and E. Severity of self-reported recidivism was strongly predicted by the amount of risk factors, and to a lesser degree by P. Severity of officially recorded recidivism was predicted by the amount of risk factors, but not in the recidivists sample.

In conclusion it can be stated that it was a typology based on environmental risk and protective factors that was related to recidivism while a typology based on the personality factors P, E and N was not. That does not mean that personality factors were not informative. P and E did emerge as predictive factor components of critical personality-environment types, depending on the measure for recidivism used.

Lack of Relationship Between PEN Types and Recidivism

The finding that there were no relations between personality type and recidivism was remarkable. Perhaps this was due to the fact that based on cluster analysis, we did not find a type with a high PEN-profile. As already stated in the introduction, Eysenck (Eysenck & Gudjonsson, 1989) hypothesized that delinquents should score high on PEN. Assuming that re-offending delinquents are more prone to criminal behaviour than non-recidivists, it was expected that especially offenders characterized by high PEN would be most at risk for severe re-offending. However, none of the distinguished profiles in our study consisted of high P, E and N. We did find one type with high P, high E, average N, and one type with high P, average E and high N. In a previous study (van Dam, Janssens, & De Bruyn, 2001), conducted on a larger sample of juvenile prisoners, we identified a group of prisoners characterized by high P,E and N. This group of prisoners however was very small (8% of the total sample). The small size of this high PEN-group might be the reason that in a smaller sample (as in this study), this type could not emerge. Although Eysenck (Eysenck & Gudjonsson, 1989) stated that the high PEN-profile would especially be over represented in prison populations, other studies conducted on young adult incarcerated samples found mixed results. Aleixo and Norris (2000) and McEwan and Knowles (1984) also failed to find a high P,E,N type, while Daderman (1999) did identify a group of offenders characterized by high P,E,N.

The Impact of Environmental Risk and Protective Factors

With regard to environmental factors, results from this study revealed that it is the accumulation of risk and protective factors that predict recidivism (both self-report and official records). Risk and protective factors were interrelated and the regression analysis showed that it was especially the accumulation of risk factors

that contributed to the prediction of recidivism. This latter finding is much in line with recent findings of Stouthamer-Loeber et al. (2002). In a high risk community sample they found that the accumulation of risk factors dramatically increases the risk of later persistent serious offending. In addition, we found that this also holds for adolescent criminal recidivism in the post release situation. However, the study of Stouthamer-Loeber et al. also revealed an independent contribution of protective (promotive) factors to the prediction of later persistent serious offending. A high amount of protective factors decreased the risk for persistent offending.

Our study did not show an independent contribution of protective factors to the prediction of recidivism. This finding may be related to the age factor. Stouthamer-Loeber et al. studied two samples: a younger sample (mean age 7 years) and an older sample (mean age 13 years). They found that the odds ratios for protective effects tended to be higher for the youngest sample. As they noted, this was also found by Smith et al. (2000 as cited in Stouthamer-Loeber et al., 2002). According to Stouthamer-Loeber et al. this finding may indicate "…that many children enter middle and late childhood with a healthy dose of promotive factors, but over time, such factors either may diminish or disappear, or may lose in the balance with emerging risk factors." (p. 120).

Following Stouthamer-Loeber et al.'s (2002) reasoning would imply that in our sample of male late adolescents (mean age 19 years) the balance between risk and protection was already severely disturbed in disfavour of the protective factors before detention. Indeed, we found relatively low rates of protective factors in the post release situation, especially when high numbers of risk were present. After re-entry in the community, these adolescents are vulnerable high-risk persons (due to their criminal history), and might not have the availability of resources that could elaborate potential protection. And even if they possess these resources, much more efforts would have to be made to generate and maintain these protective factors than in normal non-criminal adolescents. A fragile balance between protective and risk factors could then be easily disturbed (again) in favour of the risk factors.

Clearly, more studies are needed to explore and confirm this explanation. More particularly, at least three issues need further examination. First, it must be sought out whether ex-offenders indeed possess less resources for protection, and

if so, which factors might nevertheless function as protection for them. Second, when these protective factors are identified, the preventive effect of these factors for recidivism must be examined. Finally with respect to treatment it must be studied how protective factors can be created and developed, and following how ex-offenders could be guided in maintenance of these factors.

Combined Effects of Personality and Environmental Risk and Protective Factors on Recidivism

The combined environmental-personality typology revealed two types with high P and average to high N: the 'P+ N± high risk-low protection type' with the highest and most severe self-reported recidivism rates and the 'P+N+ average risk-protection type' with a self-reported recidivism rate as high as the 'P+ N± high risk-low protection type' but an average severity of offences. The other two types were characterized by low P and N: the 'P-N- average risk-protection type' and the 'P-N- low risk-high protection type'. Both types exhibited lowest self-reported recidivism rates and the least severe offences. These results indicate that an interaction effect of P and risk and protection factors on recidivism might exist. The combination of high P, average N with high amounts of risk and low amounts of protection leads to more severe recidivism than the combination of high P and N with an average to low amount of risk and an average to high amount of protection. Furthermore, low P and N with average amounts of risk and protection leads to a lower recidivism rate and less severe recidivism.

The finding that the 'high risk-low protection' type included high P is not surprising. According to Eysenck and Gudjonsson (1989) high P persons are impulsive, aggressive, unempathic and egocentric. In his recent work Eysenck (1998) suggests that P is also based on the level of cortical arousal in the central nervous system. High P-scorers have a low level of cortical arousal and therefore seek thrills and excitement to gain an optimal level of arousal (see also Gudjonsson, 1997). This implies that high P-scorers seek for risk-full situations, which is in accordance with our finding that the 'high risk-low protection' type is characterized by high P. We also found that both types with high P were relatively high on N. The combination of high P and N is often found in offender samples (Blackburn, 1993; Gudjonsson, 1997). High Neuroticism scores refer to emotional instability. According to Gudjonsson (1997) "high N-persons with antisocial

tendencies will engage in these behaviours more strongly than emotionally stable persons with antisocial tendencies" (p.159). We found that it is especially the combination of high P, N and high risk that causes the most severe recidivism. The possibility that it is P and not E that in combination with N handicaps socialisation, fits with the latest theoretical insights. As phrased by Gudjonsson (1997, p. 160): "Whereas in Eysenck's early work E played a crucial role in his theory of criminality, P has now taken the more prominent role". High P and N combined with average risk and protective factors leads to a comparable but less severe recidivism rate. Apparently, for high PN-recidivists, the amount of risk factors is important for the final severity of crimes.

It must be noted that although differences in recidivism rates of the four types were in the expected direction, they did not always met the criteria of significance, probably due to the low number of respondents in each type. Therefore, further studies on larger samples are needed to examine the possible interaction effects of P, N and risk and protection factors on recidivism in the post release situation.

Differential Predictive Power of P and E for Self-Reported and Officially Recorded Recidivism

Results of our study clearly demonstrated the differential contribution of separate personality dimensions in the explanation of self-reported and officially recorded recidivism. With respect to self-reported recidivism it appeared that P was related to occurrence and severity. Gudjonsson (1997) and Blackburn (1993) already stated that high Psychoticism scores characterise the more serious and persistent offenders. These statements are endorsed by our findings. Furthermore, Gudjonsson refers to findings that high Psychoticism scorers are particularly resistant for therapeutic interventions. Respondents in our recidivism study all have been treated in a juvenile detention centre. The effect of treatment on recidivism was not the aim of our study, but our results seem to subscribe the notion that high Psychoticism scorers are not easy to treat, since they persist in offending.

The finding that P was related to self-reported delinquency is supportive with findings of other studies (e.g. Aleixo & Norris, 2000; Romero, Angeles Luengo, & Sobral, 2001) and with Blackburns' (1993) and Gudjonssons' (1997) statements that

high Psychoticism scores characterise the more serious and persistent offenders. Farrington, Birron, and Le Blanc (1982) have insisted that the relationship between Psychoticism and delinquency may be tautological, since the instruments for measuring Psychoticism contain items relating to antisocial behaviour. However, Heaven (1993) and Romero et al. (2001) eliminated P-items that were conceptually related to antisocial behaviour, and still found relations between Psychoticism and self-reported delinquent behaviour.

If in this study, measurement of recidivism had been restricted to the use of official criminal records, not P, but E would emerge as a significant predictor for occurrence of recidivism. The finding that E, instead of P was related to occurrence of officially recorded recidivism, might be related to a natural bias of officially recorded recidivism. As already noted, one of the shortcomings of using official criminal records is the issue of dark number. Official records only hold crimes that came to the notice of the police. The personality dimension Extraversion is comprised of personality traits like sensation seeking and social activity. Persons with high E are impulsive, sociable and adventurous, and therefore might easily attract the attention of the police. When they are more at risk to get caught it is likely that highly extraverted recidivists are over represented in official criminal records compared to recidivists with lower levels of extravert behaviour. So the finding that adolescents with high E are more at risk for officially recorded recidivism, is perhaps more due to their eye-catching behaviour, than their actual criminal activities. This explanation was also noted by Romero et al. (2001).

The Impact of Self-Reported and Officially Recorded Recidivism

The previous paragraph documented the impact of using self-reported or officially recorded indices with respect to the predictive power of personality factors. In our study the use of these two different sources of recidivism lead to different conclusions on the relative importance of the personality and environmental factors. From the descriptive data it appeared that there was a significant correlation between both measures with regard to severity, but not with regard to occurrence. Apparently both measures of recidivism, self-report and official criminal records, measure different aspects of recidivism. Whereas self-report recidivism might also be a measure of willingness of honesty, official criminal

records might also be a representation of several other factors that are related to the chance to get caught by the police. Socio-economic factors and intelligence are examples of variables that are found to be related to official criminal records in some studies (see Romero et al., 2001). Besides the apparent dissimilarity between both recidivism measures, especially with regard to occurrence, there was also some consistency. Concerning severity, it appeared that the more severe respondents' self-reported crimes were, the more severe their officially recorded recidivism was. This finding can be regarded as a measure of validity of self-reported recidivism. In conclusion it can be stated that results from our study convincingly showed the importance of using more sources of information on committed crimes. A conclusion that was also drawn by Farrington (1995) and Babinski et al. (2001).

Limitation of The Study

This study was conducted in a particular juvenile detention centre for correctional treatment in the Netherlands. The small number of respondents in our study must be taken into account too. Results must therefore be interpreted with caution and further studies on larger samples and more institutions are necessary to draw more final conclusions. Furthermore, significant factors found in this study, are related to the living situation approximately one year after release. It would be interesting to follow samples like these for a longer period of time in order to gain insight in risk and protective factors that will effect recidivism in the long run.

Chapter 6

CONCLUSIONS AND GENERAL DISCUSSION

Within the area of studies that search for correlates of juvenile delinquency, the study of juvenile criminal recidivism has received relatively little attention. Studies that addressed the issue of juvenile criminal recidivism, only seldom considered risk and protective factors in the post release living situation. The general aim of the present dissertation is to get more insight in the contribution of personality traits and post release environmental risk and protective factors in juvenile criminal recidivism after release from a juvenile correctional treatment centre. In this study, relations between personality and recidivism were mainly studied from the perspective of Eysencks' PEN-model. Eysenck (1977) is one of the few who explicitly theorized on relations between personality and crime. As a consequence Eysencks' theory is one of the most influential in studying relations between personality and crime. Relations between environmental risk and protective factors and recidivism were studied based on a review of empirical findings on correlates of the development and continuation of juvenile delinquency.

Based on personality theory and literature review, five research questions were formulated, that were elaborated in four studies:

1. How many juveniles recidivated after their release from a juvenile correctional treatment centre?
2. To what extent are personality traits related to juvenile criminal recidivism?
3. To what extent are environmental risk and protective factors in the post release situation related to juvenile criminal recidivism?
4. Can juvenile criminal recidivism in the post release situation be explained by combined effects of personality traits and environmental factors?
5. What is the relative contribution of personality traits and environmental factors in the post release situation to juvenile criminal recidivism?

First we describe and discuss the findings which relate to the abovementioned research questions. Second, we discuss the findings of this study with regard to the distinctive features and limitations. Finally we describe some practical implications of the studies presented in this dissertation.

Research Findings

1. How many juveniles recidivated after their release from a juvenile correctional treatment centre?

In all four studies recidivism rates of the respondents were addressed. In the study described in chapter 2 we found that 61 of the 95 ex-prisoners (64%) had been arrested at some point in time after they left "De Hunnerberg". This recidivism rate was obtained by official criminal records. In Chapter 3 we found that 75% of the respondents reported on one or more delinquent acts after their release from "De Hunnerberg". In Chapter 4 and 5 we found recidivism rates of 61% and 60% respectively, based on official criminal records and a recidivism rate of 75% based on self-report. Summarizing it appeared that based on official criminal records, approximately 60% of the ex-prisoners became a recidivist and based on self-reported delinquent behaviour, 75% of the ex-prisoners became a recidivist.

Perhaps the most plausible explanation for the differences in officially recorded and self-reported recidivism rates is the number of undetected crimes which is often referred to as the 'dark number' (Wartna, 1999). On the self-report questionnaire respondents reported on crimes they committed that were not detected by the police. Another explanation concerns the severity of crimes reported on in the self-report questionnaire. In the self-report questionnaire used in this study, respondents were asked to report on both severe (e.g. burglary, robbery) and less severe offences like vandalism and shoplifting. In some cases these minor offences are settled out of court, and therefore are not registered in official criminal records, since those records only report on offences that were sent to court.

Both official and self-reported recidivism rates found in our study are high. How are these rates related to recidivism rates found in other studies? Cottle, Lee, and Heilbrun (2001) conducted a meta analysis on 22 studies on juvenile recidivism and reported a mean officially recorded recidivism rate of 48% with a minimum of 22% and a maximum of 75% (60% in our study). However, as Cottle et al. noted,

definitions of recidivism vary from re-arrest rates to reconviction rates or even imprisonment. As a consequence, this variability in definitions of recidivism influences the actual reported recidivism rate. It can be easily reasoned that recidivism rates of re-arrest will be higher than recidivism rates of imprisonment, since re-arrest does not automatically lead to imprisonment. Unfortunately, it is unknown which recidivism rates as reported by Cottle et al. are comparable to our definition of officially recorded recidivism.

In the Netherlands, Boendermaker (1998) conducted a study on juveniles one year after their leaving from a juvenile detention centre. She found a self-reported recidivism rate of 80% (75% in our study) and an arrest rate (i.c. police records) of 34% within a year after respondents' leaving from the detention centre. The self-report rate was higher and the arrest rate was considerably lower than in our study.

The difference between Boendermakers' arrest rate and the officially recorded recidivism rate we found can be explained by differences related to the follow-up period. The follow-up period in the study of Boendermaker was one year after the respondents' leaving from the detention centre. With regard to the official criminal records, the follow-up period in our study was on average 29 months, with a minimum of 7 months and a maximum of 52 months. This implies that respondents in our study had more time to recidivate, and therefore our recidivism rate, as obtained by official criminal records, is higher than that found in the study of Boendermaker. This implication is supported by the study of van der Heiden-Attema and Wartna (2000) who reported on official recorded recidivism rates of adolescent offenders with follow-up periods of one to five years after release from a detention centre in the Netherlands. They found a recidivism rate of 30% within one year after release, accumulating till 57%, 63% and 65% recidivists within respectively three, four and five years after release. So, three to four years after release, the number of recidivists stabilizes and remains around 60%. Since we followed (some) respondents up to four years after release, the recidivism rate in our study is comparable to that found in the study of van der Heiden-Attema and Wartna. Our study confirms that on the long run, approximately 60% of the adolescents released from a juvenile detention centre, recidivate. In conclusion, it can be stated that our recidivism rates are high, but comparable to those found in other studies in the Netherlands.

2. To what extent are personality traits related to juvenile criminal recidivism?

In this dissertation we studied relations between personality traits and recidivism in two levels: personality profiles and single personality dimensions. With regard to personality profiles, in Chapter 2 we found that both the active (high PEN) and inadequate personality type (high P, low E, high N) as suggested by Eysenck and Gudjonsson (1989) were present in juvenile offenders placed in "De Hunnerberg". However, the majority of the male offenders (63%) exhibited a profile of low P, high E and low N. Because of the high levels of E and low levels of P and N, we called this type the extravert type. With regard to recidivism, we did not find an association between the three distincted personality profiles and officially recorded recidivism. In Chapter 5 we assessed whether a typology based on personality factors, a typology based on environmental factors and a typology based on a combination of personality and environmental factors could explain variances in recidivism. With regard to personality it appeared that a typology based on personality factors could not explain variances in recidivism. In conclusion it can be stated that we didn't find relations between personality profiles as measured by Eysencks' PEN-model and recidivism.

Comparing the profiles found in Chapter 2 and Chapter 5 some inconsistencies come into view. In Chapter 2 we found three interpretable personality types: the inadequate type (high P, low E, high N), the active type (high PEN) and the extravert type (low P, high E, low N). Neither the active type, nor the inadequate type was found in the distinguished profiles of Chapter 5, but the extravert type was.

That two of the three distinguished profiles of Chapter 2 did not emerge in Chapter 5 might be caused by differences in sample sizes. In Chapter 2 analyses were conducted on a rather large sample (N=126). Both the inadequate and the active type appeared to be small (29% and 8% of the total sample respectively). The study in Chapter 5 was conducted on a rather small sample (N=60). That might be the reason that the active and inadequate type could not emerge. The finding that the extravert type emerged as being the most frequent type in both Chapter 2 and 5, supports this notion.

Another reason for finding different types in both studies might be the measures used. In Chapter 2 we used our own experimental PEN-scales, in Chapter 5 we used Eysencks' instrument (EPQ-R). Rather surprising however, was the

finding that when using our own experimental PEN-scales, we did find theoretically expected profiles, while using Eysenckian measures, we did not.

Since we found different types in Chapter 2 and 5, one may question whether selection of respondents might play a part in this finding. In Chapter 2 measurement of personality took place during the incarceration period. This implied that all residents of "De Hunnerberg" took part in the study (besides those who did not consent to take part). Although most of these respondents were legitimately released from "De Hunnerberg", some of them were later transferred to another institution, or ran away from "De Hunnerberg". In the study conducted in Chapter 5, only respondents who were legitimately released from "De Hunnerberg" took part in the research project. It could be that the personality characteristics of respondents who ran away or were transferred were different from the personality characteristics of respondents who left "De Hunnerberg" by release. However additional analyses on personality profiles of legitimate released offenders versus 'run aways' and transferred offenders did not reveal significant differences.

Contrary to the findings of non-significant relations between personality profiles and recidivism, we did find relations between single personality dimensions and measures of recidivism. In Chapter 4 we studied relationships among personality dimensions, delinquency and criminal recidivism from the perspective of two influential personality theories: Eysenck's PEN model and the Big Five model. The dimensions Neuroticism and Agreeableness of the Big Five differentiated self-reported recidivists from non-recidivists. The dimension Extraversion of PEN differentiated officially recorded recidivists from non-recidivists, and Psychoticism of the PEN-model appeared to be a strong predictor of both occurrence and severity of self-reported recidivism. These results lead us to conclude that the PEN-model has more capacity in predicting recidivism than the Big Five model. Since the Big Five model and the PEN-model are highly related, some striking findings must be noted.

First, only Extraversion of the PEN-model appeared to differentiate between officially recorded recidivists and non-recidivists. A further look at the items of both scales revealed that the Big Fives' Extraversion is in fact a revised Introversion scale. Besides these Introversion items, PENs' Extraversion also contains items referring to traits like liveliness, sociability and sensation seeking. It is likely that it

are especially those latter traits that differentiate between recidivists and non-recidivists.

Second, in several studies it is found that Psychoticism of the PEN-model is negatively related to Agreeableness and Conscientiousness (see e.g. Costa & McCrae, 1992; Eysenck, 1992), which was confirmed in our study. However, with regard to recidivism, we did find Psychoticism to be related to both severity and occurrence of self-reported recidivism, while Agreeableness was only related to occurrence of self-reported recidivism. No significant relations were found between Conscientiousness and recidivism. This finding indicates that in delinquent samples, or more specifically recidivists samples, Psychoticism can not be replaced by Agreeableness and Conscientiousness. Moreover, our study supports the notion that in fact Psychoticism is an important predictor for criminal behaviour and more specifically recidivism.

Finally, although scores on Neuroticism of the PEN and Big Five model were significantly related, only Neuroticism of the Big Five model appeared to be related to occurrence of self-reported recidivism. That Neuroticism is related to recidivism is consistent with Eysencks' theory. Especially the combination of high Neuroticism with high Psychoticism is often found in offenders (i.c. the inadequate type). We do not have a clear explanation why PEN's Neuroticism is not related to recidivism.

3. To what extent are environmental risk and protection factors in the post release situation related to juvenile criminal recidivism?

In Chapter 3 we examined relations between single risk and protective factors in the post release situation and the occurrence and severity of self-reported criminal recidivism. In Chapter 5 we assessed whether a typology based on risk and protective factors could explain variances in recidivism. Furthermore we studied the relative weight of personality factors and risk and protective factors on recidivism.

The results of Chapter 3 showed that risk factors in the domains of child characteristics, family factors and economic deprivation appeared to be related to both occurrence and severity of recidivism, and risk factors in the peer domain were only related to severity of recidivism. Protective factors in the domain of child characteristics were related to both occurrence and severity of recidivism, protective factors in the peer domain and the social network domain were only

related to severity of recidivism. These results convincingly show the importance of looking at both occurrence and severity of recidivism: some risk and protective factors are not related to the occurrence of recidivism, but they do matter with regard to severity of recidivism.

Results from the cluster analysis in Chapter 5 completed the findings of Chapter 3. The most severe recidivists experienced the highest amounts of risk factors especially in the domains of child characteristics and peers. The least severe recidivists experienced the highest amounts of protective factors especially in the domain of child characteristics.

The results of both Chapters 3 and 5 supported the findings of other studies with regard to the cumulative effects of risk and protective factors on delinquent behaviour (e.g. Jessor, Van Den Bos, Vanderryn, Costa, & Turbin, 1995; Stouthamer-Loeber, Loeber, Wei, Farrington, & Wikström, 2002). In Chapter 3 we found that accumulation of risk and protective factors in the post release situation is strongly related to occurrence and severity of recidivism. In Chapter 5 it appeared that it are especially the adolescents who experienced a combination of high amounts of risk and low amounts of protection in the post release situation, who are most at risk for both officially recorded and self-reported recidivism. The greatest chances for successful reintegration (i.c. no recidivism) are found in the adolescents who experienced a combination of high amounts of protection and low amounts of risk.

The risk and protective factors studied in this dissertation were based on a literature review of empirical findings on correlates of the development and continuation of juvenile delinquency. The results of Chapter 3 showed that risk and protective factors found to be related to delinquency and recidivism in general, do not always apply to a post release situation. Most striking was the finding that risk and protective factors of the school/work domain (i.c. unemployment, job satisfaction and school performance) were not related to recidivism. This finding is contradictory to what is generally stated in literature. Additional analyses revealed interaction effects between the actual living situation of adolescents after release and factors of the school/work domain on recidivism. For adolescents who live on their own, being unemployed heightens the chance of severe recidivism, while having a satisfying job decreases the occurrence and chance on severe recidivism. Adolescents who lived with their parents, were most at risk for severe recidivism

when they had a satisfying job, and were least at risk for recidivism when they were unemployed.

4. Can juvenile criminal recidivism in the post release situation be explained by combined effects of personality traits and environmental factors?
5. What is the relative contribution of personality traits and environmental factors in the post release situation to juvenile criminal recidivism?

Chapter 5 addressed both research questions 4 and 5. We examined the combined influence and relative weight of personality and post release environmental risk and protective factors on juvenile recidivism. In the combined environmental-personality typology the 'high risk-low protection' type emerged in combination with high scores on Psychoticism (P+) and average scores on Neuroticism (N±). The 'low risk-high protection' type emerged in combination with low scores on Psychoticism (P-) and Neuroticism (N-). The two other environmental types both were associated with average amounts of risk and protective factors, one type was combined with high Psychoticism (P+) and high Neuroticism (N+), and one type with low Psychoticism (P-) and low Neuroticism (N-). Both the 'P-N- average risk-protection type' and the 'P-N- low risk-high protection type' exhibited lowest self-reported recidivism rates and the least severe offences. The 'P+N± high risk-low protection type' had the highest and most severe self-reported recidivism rate; the 'P+N+ average risk-protection type' had a self-reported recidivism rate as high as the 'P+N± high risk-low protection type', but the severity of offences was on average. These results indicate that an interaction effect of P and risk and protection factors on recidivism might exist. The combination of high P, average N with high amounts of risk and low amounts of protection leads to more severe recidivism than the combination of high P and N with average amounts of risk and protection. Furthermore, low P and N with average amounts of risk and protection leads to a lower recidivism rate and less severe recidivism. Although differences in recidivism rates of the four types were in the expected direction, they did not always met the criteria of significance, probably due to the low number of respondents in each type. Therefore, further studies on larger samples are needed to examine the possible interaction effects of P, N and risk and protection factors on recidivism in the post release situation.

The finding that the 'high risk-low protection' type included high P is not surprising. According to Eysenck and Gudjonsson (1989) high P persons are impulsive, aggressive, unempathic and egocentric. In his recent work Eysenck (1998) suggests that P is also based on the level of cortical arousal in the central nervous system. High P-scorers have a low level of cortical arousal and therefore seek thrills and excitement to gain an optimal level of arousal (see also Gudjonsson, 1997). This implies that high P-scorers seek for risk-full situations, which is in accordance with our finding that the 'high risk-low protection' type is characterized by high P. We also found that both high P types scored relatively high on N. The combination of high P and N is often found in offender samples (Blackburn, 1993; Gudjonsson, 1997). High Neuroticism scores refer to emotional instability. According to Gudjonsson (1997) "high N-persons with antisocial tendencies will engage in these behaviours more strongly than emotionally stable persons with antisocial tendencies" (p.159). We found that is especially the combination of high P, N and high risk that causes the most severe recidivism. High P and N combined with average risk and protective factors leads to a comparable but less severe recidivism rate. Apparently, for high PN-recidivists, the amount of risk factors is important for the final severity of crimes.

The finding that P, N and the amount of risk and protective factors are related to recidivism, was partially confirmed in the regression analyses. Results revealed that P was the only significant predictor for occurrence of self-reported recidivism, while severity of recidivism was strongly predicted by the amount of risk factors, and to a lesser degree by P. N and the amount of protective factors did not emerge as predictors for recidivism in the regression analyses.

Distinctive Features and Limitations

The studies presented in this dissertation are distinctive from other studies in the area of delinquency and recidivism in several ways.

First our respondents were male adolescents who had been convicted for serious offences, and were released from a juvenile correctional treatment centre after they completed their sentence. Respondents were actually visited one year after their release from the community. Studies on these kind of specific samples are scarce; these groups are difficult to approach. To be feasible, studies of this kind require full cooperation of the institution with the research project and

measures to guarantee a high response rate. Our study fulfilled these two conditions. This project complied with the first condition since the initiative for this research project came from "De Hunnerberg" itself. The second condition was fulfilled because we used familiar staff members to visit the boys. The staff members were acquainted with the boys which provided several advantages. One advantage was that the staff members were familiar with the boys' relatives and social network, so they had more entrances to trace them. Furthermore, the role of the staff members as the boys' former caretaker made it easier to make contact and pursue the boys to cooperate in the research project. Most boys were positively surprised that staff members of "De Hunnerberg" were still interested in their whereabouts. Finally, we expected that the personal bond between staff members and boys would heighten the trustworthiness of the results. We are convinced that the high response rate (especially in the treatment group) in this study is caused by the fact that we used familiar staff members as interviewers.

Second, the design of this study is rather unique, since we actually measured risk and protective factors in the post release situation. Although studies have been conducted on predictors of juvenile criminal recidivism, we are aware of only one study that also considered factors in the post release situation. However, this study (Boendermaker, 1998) was restricted to a description of the living situation and recidivism of ex-offenders, and did not relate these factors to recidivism. Our study explicitly concentrated on explanations of recidivism by studying relations between personality, environmental risk and protective factors and recidivism. In international literature we could not find a study that resembles the design of our study.

By measuring risk and protection after release, this study provides insight in factors that play a role in recidivism after re-entry of offenders in the community. We now know that also in the post release situation risk factors like drugs and alcohol abuse are important in the occurrence of recidivism and risk factors like deviant peers are important in the severity of recidivism. Also, it can be concluded that risk and protective factors found to be related to delinquency and recidivism in general, do not always apply to a post release situation, especially risk factors concerning the domain of school and work. The most important finding however is that in the post release situation the total number of risk factors and a high score

on the personality factor Psychoticism are the most powerful predictors of the occurrence and severity of recidivism.

Third, within the area of personality psychology there is an ongoing debate on which personality model represents the basic dimensions of personality: Eysencks' PEN model or the Big Five. Eysencks' PEN model has often been studied with respect to relations between personality and crime. Although the PEN-model and the Big Five are related, the Big Five has only scarcely been used to examine relations between personality and crime. Our research provides an important contribution to the debate by comparing both models in an offender sample and a college student sample and by studying relations between both models and recidivism. We now know that both models are able to differentiate offenders from college students. With regard to recidivism, our results showed that only the PEN-model was able to differentiate between recidivists and non-recidivists.

Fourth, our study provides a contribution to two methodological issues with regard to the measurement of recidivism. One issue concerns the sources of recidivism. In studies on predictors for delinquency and recidivism, either self-report or official records are used to obtain measures for criminal activities. Since both measures each have their specific limitations, in the present study we used both self-reported delinquent behaviour and official criminal records to measure recidivism. The results of our study convincingly show the necessity of using both measures. Different sources of recidivism lead to different conclusions about the relative importance of personality and environmental factors in the explanation of recidivism.

The other issue concerns the definition of recidivism. Recidivism is often operationalised as a dichotomy: recidivists versus non-recidivists. Recidivists committed one or more offences after release and non-recidivists did not commit any offence after release. This dichotomy does not take into account the heterogeneity and severity of the committed offences. Persons who re-offended by stealing a bike and persons who re-offend by committing an armed robbery are all recidivists but the severity of their crimes varies considerably. Therefore, in the present study both parameters of recidivism, occurrence and severity, were measured. Results of this study clearly demonstrate the importance of using both parameters. Especially with regard to the risk and protective factors it appears

that some factors are not related to occurrence, but do matter with regard to the severity of recidivism.

Finally some methodological remarks must be made. The studies presented in this dissertation were conducted in a particular juvenile detention centre for correctional treatment in the Netherlands. Furthermore, our sample consisted of only male offenders. It is not clear whether results from our study can be generalized to female adolescent offenders. There are indications that differences might exist between male and female offenders with regard to personality. Ter Laak et al. (2003) examined relations between self-reported delinquent behaviour and personality dimensions of the Big Five in a Dutch incarcerated female adolescent sample. High amounts of delinquent behaviour were related to high scores on Neuroticism and Openness, and low scores on Conscientiousness. In our study, Agreeableness and Openness appeared to be lower in the male offender sample compared to college students. Perhaps, also with regard to risk and protective factors in the post release situation differences might exist between male and female offenders. Since studies on female incarcerated adolescent offenders are scare, we were not able to compare our results on risk and protective factors with results of studies on female offenders.

The small number of respondents in our study must be taken into account too. Results must therefore be interpreted with caution and further studies on larger samples and more institutions are necessary to draw more final conclusions.

Practical Implications

The results of the studies presented in this dissertation yield some practical implications. Contrary to what is generally stated in daily practice of juvenile detention centres in the Netherlands, having a partner, moving to another neighbourhood and having a job are not guarantees for successful reintegration of ex-offenders in the community. A less supportive partner, or a partner who is deviant herself in fact increases the chance for severe recidivism. And only for adolescents who live on their own, unemployment appears to be a risk factor for recidivism. Especially risk factors concerning the domain of child characteristics (drugs, alcohol, criminal attitude) appear to be important predictors for recidivism. For youth care on juvenile delinquents these results imply that in order to prevent

recidivism or at least prevent severe recidivism, these factors especially need attention.

Furthermore results on the accumulation of risk and protective factors imply that not only single factors are important in the prevention of recidivism, but it is also important to diminish the total number of risk factors and to enhance the number of protective factors. Even for persons who score high on Psychoticism and therefore are not easy to treat (see Blackburn, 1993; Gudjonsson, 1997) a lower amount of risk factors in the post release situation decreases the severity of recidivism. For detention centres or youth care on juvenile delinquents these results indicate that it is important to make an overview of potential risk and protective factors in the post release situation for each individual. Subsequently, interventions must aim at decreasing the total number of risk factors and strengthen the protective factors.

Results of this study support the notion that receiving aftercare and being satisfied about it, is important in reducing severity of recidivism after release. Therefore, efforts must be made to intensify aftercare in the post release situation, both because it has a direct effect on reducing recidivism, but also because it can be regarded as a continued intervention aimed at reducing the number of risk factors and increasing the number of protective factors after the adolescents' actual re-entry in the community.

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Appendix 1

Table 3.1
An Overview of Risk and Protective Variables.

Variable	N items	Example	Range of answering scale	α[1]	Risk	Protection
Child characteristics						
Criminal attitude[2]	19	What do you think of someone who has broken into a house?	1= not bad at all 4= very bad	.85	Lowest 25% scores of the total range	Highest 25% of the total range
Drug abuse	2	How often do you use soft drugs? How often do you use hard drugs?	1= never; 7= every day	.50	Highest 25% of the total range	
Alcohol abuse	2	How often do you drink alcohol? How many glasses do you usually drink on an evening in the weekend?	1= never; 7= every day open question	.68	Highest 25% standardized scores of the total range	
Outgoing behaviour	1	How many evenings per week do you go to a pub?	1= never; 7= every day	-	≥6 (a few evenings per week- every day)	
Motivation for moving to another neighbourhood	1	Where did you went to after your release and why?		-		Motivation is based on availability of work, housing, wish to start a new life.
Family						
Parental support[3]	14	Is your father (mother) someone you can call on when you've got problems?	1= never 4= always	.50	Lowest 25% scores of the total range	Highest 25% of the total range

Table 3.1 *(continued)*

Variable	N items	Example	Range of answering scale	α[1]	Risk	Protection
Parental supervision[4]	4	Do your parents know where you are when you are not at home?	1= no 2= yes	.40	Lowest 25% scores of the total range	Highest 25% of the total range
Family criminality 2 measures:						
-Criminality of father, mother, sibling[3]	3	Has your father (mother/ siblings) been arrested by the police in the past year?	1= yes 2= no	-	One of the family members has been in contact with the police	
-Parental attitude toward delinquent acts[3]	12	What does your father (mother) think of someone who carries a weapon?	1= very bad 4= not bad at all	.87	or the score on parental attitude belongs to the 25% highest scores	
School/work						
School performance	5	Do you enjoy attending school?	1=not at all 4= very much	. 68	Lowest 25% standardized scores of total range	Highest 25% standardized scores of total range
Unemployment	1	Do you have a job, attend school, or are you unemployed?	1= job, 2= school, 3= school& job, 4=unemployed	-	Score 4 (being unemployed)	
Job satisfaction	7	Generally, do you enjoy going to work?	1=not at all 4=very much	.60	Lowest 25% scores of the total range	Highest 25% of the total range
Future perspectives	1	How realistic is the boys' future perspective?	1= not at all realistic 4= very realistic	-	Lowest 25% scores of the total range	Highest 25% of the total range

Table 3.1 *(continued)*

Variable	N items	Example	Range of answering scale	α[1]	Risk	Protection
Peers						
Deviant peers, 2 aspects:						
-Criminal peer group	1	Have your friends, in the last year ever been arrested by the police?	1= none of them 4= all of them	-	Score on criminal peer group ≥2 or contact with boys from the detention centre ≥3 (a few times a month)	
-Contact with boys from the correctional institution	1	How often do you have contact with boys of the detention centre?	1= never 6= every day	-		
Criminality of the partner	2	Has your partner been in contact with the police in the past year? Has your partner ever been in some sort of juvenile correctional facility?	1= yes 2=no	-	At least one of the questions is answered with 'yes'	
Support from partner	5	When you're feeling lousy, is your partner one of the first to know?	1= never 4= always	.83	Lowest 25% scores of the total range	Highest 25% of the total range
Non-deviant best friend	1	Do you have a best friend?	1= yes; 2= no	-		Score 1 under the condition that none of the respondents' peers is criminal (risk factor *deviant peers* =0)

Table 3.1 *(continued)*

Variable	N items	Example	Range of answering scale	α[1]	Risk	Protection
Economic deprivation						
Low income	1	How much do you earn each month?	1= <450€; 5= >1500€	-	Score 1 (<500 €)	
Debts	1	How many debts do you have?	1= none; 6= >5000€	-	Score ≥ 2 (having debts)	
Social network						
Availability of significant other	1	Is there someone who is very important to you besides parents, siblings and partner?	1= yes 2=no	-		Score 1
Aftercare 2 aspects						
-Contact with social services	2	How important is the person from social services to you? What is the quality of contact with the person from social services?	1= not important 4= very important 1= poor 4= very good	-		Both questions regarding contact with social services have score 4 or respondent received
-Aftercare following release	1	Did you receive aftercare following release and were you satisfied with it?	Open question	-		aftercare after release and was satisfied with it.

[1] Cronbrachs' Alpha.

[2] Based on scales developed by Weerman (1998) and Gerris et al. (1998).

[3] For respondents who did not have a father or mother, only answers for the remaining parent were included.

[4] For respondents who did not live with parents these questions were not applicable; they received score 0 on both risk and protection.

Samenvatting
(Summary in Dutch)

In de Westerse samenleving is jeugddelinquentie een ernstig probleem geworden. In de laatste jaren is dan ook veel onderzoek gedaan naar de ontwikkeling van delinquent gedrag bij jongeren vanuit een psychologisch perspectief. In het algemeen richten deze studies zich op het zoeken van factoren die samenhangen met het wel of niet ontwikkelen van delinquent gedrag. Daarbij kunnen twee onderzoekstradities worden onderscheiden: studies die zich richten op verklaringen vanuit de persoonlijkheidskenmerken van de jongere en studies die zich richten op verklaringen vanuit de omgevingskenmerken van de jongere. In beide tradities is relatief weinig aandacht besteed aan recidive oftewel terugval in delinquent gedrag na een periode van detentie. Studies die wel recidive van jongeren onderzochten hebben nauwelijks gekeken naar factoren die een rol spelen in de leefsituatie van jongeren na hun vertrek uit een jeugdinrichting. Het doel van dit proefschrift was om na te gaan in welke mate persoonlijkheidskenmerken en risico- en beschermende factoren in de leefsituatie na vertrek uit een justitiële jeugdinrichting, bijdragen aan recidive.

In dit onderzoek is de samenhang tussen persoonlijkheidskenmerken en recidive voornamelijk bestudeerd vanuit het perspectief van Eysencks' PEN-model. Eysenck (1977) is een van de weinigen die een theorie heeft ontwikkeld over relaties tussen persoonlijkheid en criminaliteit. Eysencks' theorie is dan ook een van de meest invloedrijkste in het bestuderen van samenhang tussen persoonlijkheid en criminaliteit. De samenhang tussen risico- en beschermende factoren in de leefomgeving en recidive werd bestudeerd op basis van een literatuuroverzicht. In dit literatuuroverzicht zijn empirische bevindingen van factoren die samenhangen met de ontwikkeling en continuering van delinquent gedrag beschreven.

Op basis van Eysencks' persoonlijkheidstheorie en de in de literatuur gevonden risico- en beschermende factoren zijn vijf onderzoeksvragen geformuleerd. Deze zijn uitgewerkt in vier studies waarover in de hoofdstukken 2 tot en met 5 wordt gerapporteerd.

1. Hoeveel jongeren recidiveren na hun vertrek uit een justitiële jeugdinrichting?
2. In welke mate zijn persoonlijkheidskenmerken gerelateerd aan recidive van jongeren?
3. In welke mate zijn risico- en beschermende factoren in de leefomgeving na vertrek gerelateerd aan recidive van jongeren?
4. Kan recidive van jongeren na vertrek uit een justitiële jeugdinrichting verklaard worden door gecombineerde effecten van persoonlijkheidskenmerken en omgevingsfactoren?
5. Wat is de relatieve bijdrage van persoonlijkheidskenmerken en omgevingsfactoren in de leefsituatie na vertrek aan recidive van jongeren?

Het onderzoek is uitgevoerd in "De Hunnerberg" een justitiële behandelinrichting voor jeugdigen te Nijmegen. Op het moment van de dataverzameling (oktober 1999-december 2002) was "De Hunnerberg" zowel een opvang- als een behandelinrichting[6]. Jongeren die korte straffen uit moesten zitten gingen naar de opvanginrichting. Jongeren die voor het plegen van hun delict veroordeeld waren tot een zogenaamde PIJ-maatregel[7], gingen naar de behandelinrichting. Zij verbleven daar gemiddeld twee jaar.

De eerste onderzoeksvraag (hoeveel jongeren recidiveren na hun vertrek) komt in alle vier de studies aan de orde. In hoofdstuk 2 vonden we dat 64% van de jongeren na hun vertrek uit "De Hunnerberg" weer met justitie in aanraking was gekomen. Dit recidivepercentage is gebaseerd op geregistreerde gegevens uit het Justitieel Documentatieregister. In hoofdstuk 3 vonden we dat 75% van de jongeren aangaf dat zij één of meerdere delicten hadden gepleegd na hun vertrek uit "De Hunnerberg". In hoofdstuk 4 en 5 vonden we recidivepercentages van respectievelijk 60% en 61%, gebaseerd op gegevens van het Justitieel Documentatieregister, en een recidivepercentage van 75% gebaseerd op zelfgerapporteerde gegevens. Samenvattend kan gesteld worden dat ongeveer 60% van de jongeren recidiveert wanneer gekeken wordt naar officiële cijfers, en 75% van de jongeren recidiveert

[6] In de loop van 2003 heeft "De Hunnerberg" een bestemmingswijziging ondergaan. Het is nu alleen nog een opvanginrichting.
[7] PIJ: Plaatsing in een Inrichting voor Jeugdigen. Deze maatregel is de opvolger van de maatregelen Jeugd-TBS, Strafrechtelijke OTS en Bijzondere Behandeling (BB).

wanneer gekeken wordt naar zelfgerapporteerde gegevens. Hoewel de recidivepercentages hoog zijn, zijn ze vergelijkbaar met recidivepercentages die in andere Nederlandse studies werden gevonden (Boendermaker, 1998; Van der Heiden-Attema & Wartna, 2000).

De tweede onderzoeksvraag (de samenhang tussen persoonlijkheidskenmerken en recidive) komt aan de orde in de hoofdstuk 2, 4 en 5, en is op twee manieren onderzocht. Er is gekeken naar samenhang tussen persoonlijkheidsprofielen en recidive en naar samenhang tussen afzonderlijke persoonlijkheidsdimensies en recidive. Op basis van Eysencks' theorie verwachtten we twee typen delinquenten te vinden in "De Hunnerberg": het actieve type (hoog Psychoticisme, Extraversie, Neuroticisme) en het inadequate type (hoog P, laag E, hoog N). Uit de resultaten van hoofdstuk 2 bleek dat beide typen in "De Hunnerberg" vertegenwoordigd zijn. Deze typen zijn echter in de minderheid; de meeste jongeren werden getypeerd door een profiel van laag P, hoog E en laag N. Vanwege de hoge score op E noemden we dit type het extraverte type. We vonden geen relaties tussen de drie typen en officieel geregistreerde recidivecijfers. In hoofdstuk 5 is onderzocht of een typologie op basis van persoonlijkheidskenmerken, een typologie op basis van omgevingsfactoren en een typologie op basis van zowel persoonlijkheid- als omgevingsfactoren verschillen in recidive konden verklaren. Ook in deze studie bleek dat een typologie op basis van persoonlijkheidskenmerken verschillen in recidive niet kon verklaren. Samenvattend kan gesteld worden dat er geen verband is gevonden tussen de op Eysencks' PEN-model gebaseerde persoonlijkheidsprofielen en recidive.

Opvallend was dat de twee theoretisch verwachte profielen, het actieve en inadequate type, wel naar voren kwamen in de profieltypen van hoofdstuk 2, maar niet in de profieltypen van hoofdstuk 5. Alleen het extraverte type uit hoofdstuk 2 kwam ook naar voren als één van de gevonden profieltypen in hoofdstuk 5. De belangrijkste verklaringen voor deze verschillen zijn gelegen in het aantal respondenten (N=126 in hoofdstuk 2, N=60 in hoofdstuk 5), en het gebruikte meetinstrumentarium (zelfgeconstrueerde PEN-schalen op basis van Nederlandstalige persoonlijkheidsvragenlijsten in hoofdstuk 2 versus Eysencks' EPQ in hoofdstuk 5).

Er werden wel significante relaties gevonden tussen afzonderlijke persoonlijkheidsdimensies en recidive, zo bleek in hoofdstuk 4. In deze studie onderzochten we de samenhang tussen persoonlijkheidsdimensies, delinquentie en recidive vanuit twee theoretische invalshoeken: Eysencks' PEN-model en het Big Five model. Hoewel deze persoonlijkheidsmodellen veel overeenkomsten vertonen, is het Big Five model nog maar nauwelijks gebruikt om relaties tussen persoonlijkheid en delinquentie te onderzoeken. Uit de resultaten van hoofdstuk 4 bleek dat de dimensies Neuroticisme en Agreeableness (Aangenaamheid) van de Big Five recidivisten van niet-recidivisten kon onderscheiden op basis van de zelfgerapporteerde gegevens. De dimensie Extraversie van het PEN-model onderscheidde officieel geregistreerde recidivisten van niet-recidivisten. Naast de samenhang tussen persoonlijkheidsdimensies en het vóórkomen van recidive, is in deze studie ook gekeken naar samenhang tussen persoonlijkheidsdimensies en de ernst van zowel de zelfgerapporteerde als de officieel geregistreerde recidive. De dimensie Psychoticisme van het PEN-model bleek een sterke voorspeller te zijn voor zowel het vóórkomen van zelfgerapporteerde recidive als de uiteindelijke ernst daarvan.

Op basis van deze resultaten werd geconcludeerd dat het PEN-model beter in staat is recidive te voorspellen dan de Big Five.

De derde onderzoeksvraag (samenhang tussen omgevingsfactoren in de leefsituatie na vertrek en recidive) is eveneens op twee manieren onderzocht en komt aan de orde in hoofdstuk 3 en 5. In hoofdstuk 3 hebben we gekeken naar de samenhang tussen risico- en beschermende factoren in de leefsituatie na vertrek en zelfgerapporteerde recidive. In hoofdstuk 5 is onderzocht of een typologie op basis van risico- en beschermende factoren verschillen in recidive kon verklaren. De resultaten van hoofdstuk 3 toonden aan dat risicofactoren in de domeinen kindkenmerken, gezinsfactoren en economische deprivatie samenhangen met zowel het vóórkomen van als de ernst van recidive. Risicofactoren in het domein vrienden bleken samen te hangen met de ernst van recidive. Met betrekking tot de beschermende factoren bleek het domein kindkenmerken gerelateerd te zijn aan zowel het vóórkomen van als de ernst van recidive. Beschermende factoren in de domeinen vrienden en sociaal netwerk bleken samen te hangen met de ernst van recidive. Deze resultaten bevestigen dat het belangrijk is om zowel naar het

vóórkomen van als naar de ernst van recidive te kijken: sommige risico- en beschermende factoren zijn niet van invloed op het vóórkomen van recidive, maar zijn wel belang voor de uiteindelijke ernst ervan.

De resultaten van de clusteranalyse in hoofdstuk 5 vullen de bevindingen uit hoofdstuk 3 aan. De ernstigste recidivisten hadden het hoogste aantal risicofactoren in met name de domeinen kindkenmerken en vrienden. De minst ernstige recidivisten hadden het hoogste aantal beschermende factoren, voornamelijk in het domein kindkenmerken.

In beide hoofdstukken 3 en 5 is ook aandacht besteed aan de cumulatie van risico- en beschermende factoren. In hoofdstuk 3 kwam naar voren dat cumulatie van risicofactoren en cumulatie van beschermende factoren sterk samen hingen met zowel het vóórkomen van als de ernst van de recidive. In hoofdstuk 5 bleek dat met name de jongeren die in de leefsituatie na vertrek een combinatie hadden van veel risicofactoren en weinig beschermende factoren de grootste kans hadden om te recidiveren. Jongeren die een combinatie hadden van weinig risicofactoren en veel beschermende factoren hadden de meeste kans op een succesvolle reïntegratie (geen recidive).

De vierde onderzoeksvraag (gecombineerde effecten van persoonlijkheids- en omgevingsfactoren op recidive) en de vijfde onderzoeksvraag (relatieve bijdrage van persoonlijkheids- en omgevingsfactoren aan recidive) komen beide aan de orde in hoofdstuk 5. De gecombineerde omgeving-persoonlijkheidstypologie leverde vier te onderscheiden types op. Het type 'hoog risico - laag bescherming' werd gekenmerkt door hoge scores op Psychoticisme (P+) en gemiddelde scores op Neuroticisme (N±). Het type 'laag risico – hoog bescherming' werd gekenmerkt door lage scores op Psychoticisme (P-) en lage scores op Neuroticisme (N-). De twee overige types hadden beiden een gemiddeld aantal risico- en beschermende factoren. Een type werd gekenmerkt door hoog P (P+) en hoog N (N+), het andere type door laag P (P-) en laag N (N-). De beide typen 'P-N-laag risico – hoog bescherming' en 'P-N-gemiddeld risico en bescherming' hadden de laagste zelfgerapporteerde recidivepercentages en de minst ernstige recidive. Het type 'P+N±hoog risico - laag bescherming' had zowel het hoogste zelfgerapporteerde recidivepercentage als de meest ernstige recidive. Het recidivepercentage van het type 'P+N+gemiddeld risico en bescherming' was even hoog als het percentage van

het type 'P+N±hoog risico - laag bescherming', maar de ernst van de recidive was gemiddeld.

Deze resultaten wijzen op een mogelijk interactie-effect van P en risico- en beschermende factoren op recidive. De combinatie hoog P, gemiddeld N met veel risico en weinig beschermende factoren leidde tot ernstigere recidive dan de combinatie hoog P, hoog N met een gemiddeld aantal risico- en beschermende factoren. Daarnaast bleek de combinatie laag P, laag N met een gemiddeld aantal risico- en beschermende factoren gepaard te gaan met een lager recidivepercentage en minder ernstige recidive. Daarbij moet wel worden opgemerkt dat de verschillen in de verwachte richting zijn, maar niet altijd significant. Hoogstwaarschijnlijk komt dat door het kleine aantal respondenten van ieder type. Daarom zullen eventuele interactie-effecten tussen P, N en risico- en beschermende factoren op recidive in de leefsituatie na vertrek verder onderzocht moeten worden met grotere aantallen respondenten.

De relatieve bijdrage van persoonlijkheid en omgevingsfactoren aan recidive werd onderzocht middels regressie-analyse. Psychoticisme bleek de enige significante voorspeller te zijn voor het vóórkomen van zelfgerapporteerde recidive. Ernst van recidive bleek goed voorspeld te kunnen worden door het aantal risicofactoren en in mindere mate door P. Neuroticisme en het aantal beschermende factoren kwamen uit de regressie-analyse niet naar voren als voorspellers voor recidive.

Implicaties voor de praktijk

Voor de praktijk van de hulpverlening aan jeugddelinquenten, hebben de resultaten van deze studie het volgende opgeleverd. In tegenstelling tot dat wat in het algemeen wordt aangenomen blijken de zogenoemde drie W's (wonen, werk, "wijf"), geen garantie te zijn voor een succesvolle reïntegratie in de samenleving. Een delinquente vriendin zorgt ervoor dat de kans op ernstige recidive alleen maar toeneemt. Verder blijkt dat alleen voor jongeren die op zichzelf wonen, werkloosheid een risicofactor is voor recidive. Het zijn voornamelijk risicofactoren als drugs, alcohol en criminele attitude die sterke voorspellers zijn voor recidive. Om recidive van jongeren na vertrek uit een justitiële jeugdinrichting te voorkomen zal met name aandacht besteed moeten worden aan die factoren. Daarnaast blijkt ook het totale aantal risico en beschermende factoren in de

leefsituatie na vertrek samen te hangen met recidive. Zelfs voor jongeren die hoog scoren op de persoonlijkheidsdimensie Psychoticisme en daardoor moeilijk te behandelen zijn, bleek een lager aantal risicofactoren te leiden tot minder ernstige recidive. Hulpverlening aan jeugddelinquenten zal zich meer moeten richten op de balans tussen risico- en beschermende factoren. Zowel tijdens het verblijf van delinquenten in een jeugdinrichting als na het vertrek in de vorm van nazorg, zullen interventies gericht moeten zijn op het verminderen van risicofactoren in de leefsituatie na vertrek en het versterken van de beschermende factoren.

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Daarnaast zijn ook de mensen van “De Hunnerberg” van onschatbare waarde geweest voor mijn onderzoek. Zonder hen was dit proefschrift er niet geweest. Jan Koolen: ik ben blij dat je zeven jaar geleden op een congres in Engeland je plannen voor dit project met Jan Janssens hebt besproken (ongetwijfeld onder het genot van een biertje). Het is duidelijk waar dat toe geleid heeft. Daarnaast wil ik je bedanken voor je steun en stimulans tijdens de uitvoering van het onderzoek. Je bent steeds achter dit project blijven staan, ook wanneer dat her en der op weerstand stuitte. Jos Spee: zonder jou was ik nooit zo goed op de hoogte geweest van alle ins en outs van “De Hunnerberg” en ‘justitieland’. Dank dat je er altijd gewoon was wanneer ik je nodig had.

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Nijmegen, oktober 2004

Curriculum Vitae

Coleta van Dam is geboren in Eindhoven op 22 februari 1973. Na het behalen van haar VWO-diploma aan de Gemeentelijke Scholengemeenschap Genderdal te Eindhoven, is zij in1992 begonnen aan haar studie Algemene Pedagogiek aan de Katholieke Universiteit Nijmegen. Zij koos voor de richting Gezinspedagogiek en rondde deze studie in 1997 af. Haar scriptie werd beloond met de Rijnhove Studieprijs; een prijs voor de beste doctoraalscriptie op het terrein van de jeugd-hulpverlening. In 1998 is zij begonnen aan haar promotie-onderzoek; eerst als onderzoeksmedewerkster bij "De Hunnerberg" en later als Assistent in Opleiding (AIO) bij de vakgroep Orthopedagogiek: Gezin en Gedrag aan de Katholieke Universiteit Nijmegen. Gedurende deze periode verzorgde zij werkgroepen in het kader van het propedeuse onderdeel 'Inleiding Gezin en Gedrag' en heeft ze verschillende scriptie-studenten begeleid.
Sinds 2003 werkt zij als onderzoeksmedewerkster bij De Hoenderloo Groep, een residentiële instelling voor jeugdzorg en onderwijs in Hoenderloo.